

P. Maynard &

ACCOUNT

PRINT

THE

SIXTH

NUMBER

OF

THE
ACCOUCHEUR'S VADEMECUM:
OR,
MODERN GUIDE
TO THE
PRACTICE OF MIDWIFERY.



BY
THOMAS TRAVERS BURKE, M.D.

LONDON.
SIMPKIN, MARSHALL AND COMPANY.
EDINBURGH: FRASER AND CO.
DUBLIN: MACHEN AND CO.

1840.



W. WARREN, PRINTER, 140, CAPEL-STREET, DUBLIN.

TO

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MASTER OF THE DUBLIN LYING-IN HOSPITAL,
A PRESIDENT OF THE DUBLIN OBSTETRICAL SOCIETY,
&c. &c. &c.

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AND AN HUMBLE TESTIMONIAL

OF THE GREAT BENEFIT

WHICH DOCTOR KENNEDY'S RESEARCHES

HAVE CONFERRED

ON OBSTETRICAL SCIENCE,

BY HIS MOST OBEDIENT AND

AND VERY HUMBLE SERVANT,

THE AUTHOR.

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PREFACE.

THE author was induced to enter upon the present work in the hope of providing for the Obstetric student, and those practitioners who do not devote themselves *exclusively* to the midwifery branch of the medical profession, that which he regarded as a *desideratum*, and often felt the want of in the earlier stages of his obstetrical pursuits. A really comprehensive and explanatory VADEMECUM, not inconvenient from its bulk or mystification, nor so meager in its details of the topics it professes to treat of as to prove an *ignis fatuus* to the practitioner who consults it, is valuable in any department of the healing art; and perhaps in none more than that which has hitherto been left without any thing that can deserve the name of a VADEMECUM. In midwifery, there is much to try the memory as well as the nerve of the practitioner. He is often placed in situations where there is neither time for deliberation, nor opportunity for consulting with a professional brother, and an occasional

reference to the opinions of standard authorities under critical circumstances, such as he may at any moment be subjected to, may prove a great solace to him when a decision must be promptly arrived at. In provincial or colonial practice, this is peculiarly likely to occur.

We have frequently been somewhat surprised at the diversity of opinions amongst obstetricians ; but since we applied ourselves with that close attention which a sense of responsibility begets to the task necessary for the due completion of our undertaking—since we compared the numerous productions on obstetricity one with another, and proceeded assiduously to collate their contents, that surprise had vanished. The want of uniformity amongst obstetrical authors, and the rarity of students providing themselves with more than one class book while acquiring the elements of the science—or perhaps even afterwards—must be admitted fully to account for the fact adverted to. Indeed, we have more than once heard it complained of that midwifery books are generally abstruse, and indulge not a little in philosophical abstractions, so as to leave much room for latitude of opinion. We mean not to discuss that point ; but let the reader turn to the chapter on puerperal fever, that on puerperal convulsions, or that on puerperal mania, in the present volume, and he will be able to form some idea of the want of uniformity that prevails between able writers on matters of the most

essential importance in a practical point of view. Dr. Denman, whose name never can be mentioned without respect, tells you that *moral* treatment is that from which you are to expect benefit in the mania of the puerperal state ; and he certainly is calculated to lull your apprehensions as to the risk of any formidable physical derangement or disease stealing a march upon you in that disorder ; while Dr. Burns, a professor of great experience, asseverates that at least in one out of the five species into which he divides puerperal mania, a disease of structure, likely to prove fatal, will probably advance upon you with fearfully rapid strides, unless you be decided as well as early in your physical treatment of it. Again, in puerperal convulsions Dr. Denman speaks so generally, and so freely commends the liberal use of the lancet, that few persons dependent solely on his excellent treatise for information could hesitate on employing venesection, and that copiously, whenever puerperal convulsions occurred. And yet it is unquestionable that by so doing, in at least one species of the disorder, you would run the risk of destroying your patient. In puerperal fever, likewise, the generalizing system on which the eminent Dr. Denman appears to proceed might prove of the most baneful consequences. Is this a light matter where a practitioner has formed his opinions chiefly, if not exclusively, on the direction given by a single authority however distinguished ? Why, through want of the

salutary cautions to be derived from other quarters, and due discrimination of the many protean forms which a disease is liable to assume, the medical attendant might unconsciously be guilty of homicide. Really the author does not here speak from hypothesis, for he has witnessed some very serious blunders in the practice of Midwifery, evidently from the practitioner having adopted a partial code of notions capable of but limited application. In truth, it was the impression which such occurrences made on him that first led him to form a digest from various trustworthy authors of points but partially disposed of in books in common use. A hope that what he found of advantage to himself might prove beneficial to other practitioners has occasioned the present volume to appear in print. But it is unnecessary to enlarge further on this subject, for a cursory inspection will show that topics not a few are extensively treated of in the ACCOUCHEUR'S VADAMECUM, notwithstanding its limited price and size, which works on midwifery of double its bulk, and far more than double its cost have either dismissed unnoticed, or in such a manner as to be productive of little satisfaction to the reader.

Let it not be supposed that the author hereby means to censure the writers on midwifery for a defect which is attributable to the process by which science gradually progresses towards perfection. Far from it : he regards it as the almost natural con-

sequence of the very system to which the art must be indebted for its only sure foundation. An original writer, to be valuable, and a faithful contributor to science, must always describe a disease as it has come before him in practice ; and the form in which that disease has chanced to present itself to his observation will necessarily influence the mode of treatment he adopts and recommends. To act thus only proves him to be a competent and trustworthy witness. But we have said that disease is often protean in its forms. It follows, therefore, that it may (under the same arbitrary name) present itself in different aspects to various practitioners, and that each may give his own description of it without being chargeable with the slightest error. Here we have a solution of the apparent discrepancy alluded to, and without a scintilla of censure being called for against those authors who have exhibited this apparent want of harmony in their works. From all this, however, we perceive the necessity of such a book as the present. By an honest *VADEMECUM*, presenting an intelligible digest of those various testimonies, the practitioner may be put on his guard against danger he might otherwise have been inapprehensive of, and made aware of remedial means before unnoticed by him.

The author trusts that he has made a material advance towards the accomplishment of an object of so much importance to the community. But supplying varieties or species of the diseases, and then appro-

priate treatment is not all that he has done; he has, besides, introduced subjects entirely omitted, or only superficially adverted to, by almost all the general systematic treatises on Midwifery.* What work, for instance, combines a truly practical application of the phenomena of obstetric auscultation with the various other topics of midwifery? Again, where, except in a detached treatise, will you meet the interesting and incalculably important subject of the "Mechanism of Parturition," adequately explained? And still this is the only test of a proper system of conducting delivery.

Besides what he has done to supply the deficiencies of which he has spoken, the author has striven to convey the matter presented in the following pages in as familiar and perspicuous a phraseology as he could command. He has necessarily consulted brevity, as far as he considered it consistent with perfect intelligibility, and a faithful record of the necessary practical details; but he has never permitted conciseness to interfere with what he deemed competent information. And he pretty confidently asserts, that few works, whatever their extent, have gone into a more comprehensive description of the minutiae of obstetric practice than this pocket volume

* Dr. Blundell's immense work includes by far the greatest number of subjects of any the author has seen; but is of formidable magnitude by no means fit for a vademecum.

does on the topics of which it progresses to treat—though these be neither few in number, nor of trivial importance in their bearing on the obstetric art. These, however, are matters on which the professional reader will not be slow in forming an opinion.

In offering the present work as a book of reference the author feels that he incurs no charge of personal vanity ; for in the following pages the most distinguished authorities of the Obstetric science may be said to speak in an audible voice. Perhaps, if the author had been less candid in acknowledging the sources whence he drew a mass of the information furnished in this volume, with much of which very many accoucheurs are not familiar, he might have obtained more credit. To have done so with dexterity might have thrown a false glare of originality over the production, in the estimation of the inexperienced. The process by which this could have been achieved is neither difficult of accomplishment, nor of unfrequent practice. But the author was not desirous of acquiring a temporary and dishonest fame by imposing upon the class of persons who might be deceived by such an artifice. His ambition was to be useful rather than fame-clad. For he considered that, whatever accuracy his statements might be proved to possess, still, in the eyes of those for whom this book is more especially intended, those statements would fail to have the same importance or weight if they purported merely to emanate from him.

Certainly with those persons (and they are numerous) who judge every literary production by the name it bears, the same facts and directions given on the *ipse dixit* of the present author would not command such deference and attention as if (as in the present instance they distinctly are) traceable to the influential authority of a Denman, a Burns, an Evory Kennedy, a Collins, a Johnson, a Rigby, a Copland, a Naeglé, &c. &c. Indeed, it has always appeared to us that the aping at *originality*, or that professional pride and jealousy by which writers are too frequently induced to pass over the authorities of labourers in the same vineyard without distinct notice is the very bane of science—a decided evil and injustice to society. Without going so far as to say with Solomon, ‘There is nothing new under the sun’ (and undoubtedly much of what passes for novelty is often indebted for its reputation as such more to a change of attire, than to any well-founded claim to intrinsic originality), our opinion is, that all scientific facts discovered, all descriptions lucidly and correctly given, become the decided property of the scientific world when once published by the authors, and ought from that moment to be applied in the best possible manner for the benefit of the human race. In such a profession as that of medicine more especially, in which the entire of mankind have a vested interest, it is absolutely criminal to narrow or vitiate the stream of discovery for the purpose

of placing a rival in the back ground. But how often do we see, where one writer, in a systematic work, has been peculiarly felicitous in treating a particular subject, that his successor or competitor either avoids that subject, or slurs it over so as to make it appear of minor importance, while he will labour some limping hobby of his own through entire pages! This he will do to the manifest injury of the very readers who confide in him to supply them with the best instruction attainable. This we must again pronounce to be a gross offence against science and philanthropy. It is a fault, however, in which the present author is by no means emulous to participate; and he trusts that, while in the ACCOUCHEUR'S VADE-MECUM he has felt it his duty to conduct numerous concurrent streams from the purest sources into one common channel, and thus to render them accessible to hundreds who would never have visited their native fountains, he has not despoiled any of the honour justly due to them.

The author hopes that the present work, which has cost him both research and labour, will prove an useful acquisition to those of his professional brethren whose occupations or habits do not always permit them to brush off the book-dust of extensive libraries, and still who, whatever their original attainments might have been, are not so free from the common infirmity of human nature as *never* to require a remembrancer. He also has some confidence, that

the obstetric student will find this work considerably to economise his time, and abridge his mental labours, while at the same time it will enable him more fully to comprehend, and of course profit by, the course of valuable instruction which a lying-in hospital affords him.

To that numerous class of obstetrical practitioners, the female (or midwives, properly so called) on whom so vast a proportion of the humbler order of our community in the provinces are, almost exclusively, dependent for assistance in parturition, a volume like the present, affording a concise repertory of their art; procurable at so very trifling an expense; requiring but moderate study; peculiarly facile of reference from the simplicity of its arrangement; written in as familiar and popular a style as the subject would admit of, and, from the regular order in which the topics are made to succeed each other, and the care taken to dispense with what was not deemed of essential advantage; by no means burdensome to the memory, ought to prove of the highest importance and utility. The professional education which such persons have an opportunity of acquiring, even those of them who do attend for six months at the Lying-in Hospital, is necessarily extremely circumscribed, and it is, therefore, proper that they should have before their eyes such a plain delineation of the obstetrical art as will give them timely notice when a case is getting beyond the limits of their skill, and

when it becomes their bounden duty, as they value the lives of the individuals confided to their care, to hesitate no longer in calling the aid of some practitioner of higher qualifications than they themselves can perfectly possess.

It will be seen that this Volume is not altogether limited to subjects strictly belonging to the puerperal state. The phenomena of menstruation and its diseases ; the evidences of pregnancy, and a few of the diseases termed chronic, have received attention. The author made a selection of such topics as he considered the Accoucheur most liable to be called upon to interfere in. To have extended the work to *all* the diseases incidental to females and children would have converted it from a convenient and exceedingly portable pocket-volume, into a ponderous and expensive library-book. In the Appendix certain subjects have been presented which it did not suit the author's plan to introduce into the body of the work, for he wished as little as possible to interrupt attention from the details of practice. Among those subjects are, anatomical descriptions, medical formulæ, &c.

The author entreats, that, if the ACCOUCHEUR'S VADEMECUM should be found in any degree chargeable with casual omissions or deficiencies, notwithstanding his earnest solicitude to supply all matters essential to the subject, his short-comings may meet with indulgence ; for human efforts, at the best, are

liable to fall short in spite of the most sincere intentions and faithful endeavours. Besides, the author was afflicted with alarming indisposition while the work was advancing to completion. He trusts, however, that what he has accomplished will tend to a more wide diffusion of sound principles and beneficial treatment than have always hitherto prevailed amongst the innumerable minor practitioners of the Obstetrical profession, and that society will thus reap advantage from his labours.

To the distinguished individuals whom he has to record as supporters on his subscription-list, the author begs to express his deep-felt gratitude for the high patronage with which they have honoured the undertaking.

64, *Great Britain-street, Dublin,*
September, 1840.

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PREPARATIONS FOR PARTURITION.

CHAPTER I.

1. As my intention is to afford to the junior members of the profession rather a safe remembrancer of the really practical matters that ought to occupy their attention, than abstract dissertations on the arcana of midwifery, I shall endeavour to dispose of those matters as nearly as possible in the order in which they may be presumed to occur to the practitioner. And I cannot do better than to place at the head of the work those maxims which Dr. Collins so forcibly inculcates in his excellent *Practical Treatise on Midwifery*, namely, that in regulating parturitions, we ought, in all labours, to keep the patient cool from the commencement to the termination, by admitting a free circulation of fresh air, using light clothing, mild nourishment, and most carefully shunning all stimulants (except medicinally called for). Also that the bowels ought to be strictly attended to ; for the patient should be cautioned, on the very first symptoms of labour, to take medicine, so as effectually to empty the bowels.

2. Though in laying down the business of an accoucheur in the process of parturition, it is to be supposed that his chief responsibilities commence with the period when he is called upon to witness the active sufferings of his patient ; still it will

greatly promote her comfort, if not her safety, if certain precautions be previously entered upon, and directions given for this purpose, whenever opportunity occurs in case of timely pre-engagement.

3. Certain arrangements concerning the bed on which a female is to be delivered, should never be omitted, and it will be particularly necessary for the practitioner to give directions with respect to these arrangements in a first confinement, where experience is wanting to suggest to the patient what she will afterwards discover to be of no trivial importance, as helping to smooth the asperities of the puerperal state. It is desirable that the lying-in chamber should be as large, well-ventilated, and removed from noise and intercourse as her residence can present. As to the bedstead, in lying-in hospitals, narrow ones, covered with mattresses, are justly preferred; affording the practitioner more ready access to his patient, and to her a firmer support, and more freedom from injurious heat, than large bedsteads and feather-beds do. But it is obvious that in private dwellings it must be our study rather to accommodate ourselves to the habitual arrangements of the family, than to innovate in a manner inconvenient to them. It is indispensable, however, that the bedstead be removed sufficiently from the wall to permit the practitioner to pass between the latter and the right side of the former; for the usual position of the patient for delivery is placing her on her left side at the right side of the bed, close to which the medical attendant seats himself. In many instances a towel, a piece of broad tape, a ribband, or such like, is tied at the head of the bedstead, to give support to the patient, and enable her occasionally to relieve herself by some change of position. Objections, however, have been urged against this arrangement, as facilitating the *voluntary* efforts which puerperal females are too apt to indulge in, often to their incalculable detriment; but it does

not appear that we should deny what certainly does contribute to comfort, merely because of the abstract possibility of its being abused. Where, as will most frequently be the case, a large and yielding feather-bed is the one on which the patient chooses to be confined, it will be well to place a hair-mattress upon the right-hand side of it; but if this be not at our disposal, the feathers, at least, should be beaten over to the left side as much as possible. With or without the mattress, however, we ought to arrange the bed so that moisture and other things attendant upon parturition can be taken away after delivery without discomfort to the patient, or in any degree interfering with the quietude so necessary for her. This is best done by placing a large piece of oil-cloth, or a dressed sheep-skin on the bed, to protect it from being saturated with moisture, and laying over the oil-cloth a blanquet and sheet four times doubled longitudinally and laid across the bed, so as to come under the patient's hips. These, as they get wet, can be drawn to the side, so as to keep a dry part constantly under the patient, and can readily be withdrawn altogether after delivery, to her decided comfort.

4. The foregoing are the most indispensable arrangements, so far as the preparation of the puerperal bed is concerned. But this is not all. It is desirable that the rectum and the urinary bladder should be as empty as possible while the child is passing through the pelvis. This must be obvious to every practitioner who reflects upon the nature of the parts contained in the pelvis. [See Appendix.] The vagina having the rectum posterior to and in contact with it, and the bladder, when distended with urine, resting upon the upper edge of the ossa pubis, these are liable to become no trivial obstacles to the easy passage of the child, and also the fertile nursery of fever and formidable disease. They may very considerably augment the pain from pressure. In the case of a distended

bladder, not only the most distressing symptoms may occur, but that dreadful accident the rupture of the organ may be the result. The patient, therefore, ought to be instructed not to permit an accumulation to take place in the urinary bladder on the approach of her confinement ; and, indeed, it ought to be guarded against throughout pregnancy. If, as has been frequently known to happen in natural presentations, the head of the fœtus should be found to press upon the neck of the bladder, so as to prevent the evacuation of the urine, the patient ought to be directed to communicate with her medical attendant, in order that a catheter may be passed through the urethra, and the bladder be artificially emptied. And here we may as well embrace the opportunity of describing the operation of passing a catheter into the female urethra, which requires to be done with some expertness, as well as with the utmost delicacy. When the process, however, is properly conducted, no formidable difficulty occurs.

PASSING THE CATHETER.

5. The orifice of the female urethra is found, on separating the nymphæ, in front of and close to the anterior margin of the vagina. Another guide to it is the clitoris, which is about three quarters of an inch above it. Between the projecting clitoris and the external orifice of the vagina there is a smooth channel, at the termination of which, and just near the commencement of the vagina, the orifice will be discovered and felt with the tip of the finger. You are, therefore, gently to separate the nymphæ, without exposing the patient, to direct the point of the left index finger to the urethral orifice, and, having previously oiled the catheter, and taken it between the forefinger and thumb of the right hand, pass it gently into the urethra, directing it by the left index finger. It will be neces-

sary to depress the handle of the catheter in a slight degree after it has entered the urethral orifice, as the entire passage is seldom more than an inch and a half in length. This short canal has along its surface several *lacunæ*, which are occasionally large, so that the practitioner must be cautious that he do not employ force, for thereby he might cause a laceration of the urethra. In the event of his meeting with any obstruction to the free passage of the instrument, he should rather retract it than push it forward, and dexterously avoid the obstacle. By a little management he will find the catheter pass safely into the bladder.

6. With regard to the position in which the female should be placed for this operation, different directions have been given. But it is a point of but little importance. Some practitioners place the patient on her left side, as is usual in delivery, and conduct the operation in this position. Doctor Burns advises her to be placed “on her back, with her thighs separated, and the knees drawn a little up.” The object of this seems to be the greater convenience of placing a vessel to receive the contents of the urinary bladder. But if the former position be considered more delicate, as it certainly appears to be, there can be no difficulty in the female assuming any more convenient one after the instrument has been passed.

7. But all the difficulty may not be at an end with the mere passage of the catheter into the bladder; for the pressure of the child's head may here interfere with the flow of urine. This will readily be understood when we take into account the situation and connexions of the bladder and its urethra. The urethra runs along the internal surface of the arch of the pubis, to which, as well as to the substance of the vagina, it is attached by a cellular tissue. It may be felt from the vagina as presenting to the finger a sensation as if a short cord were

present in the intervening substance. Consequently, whatever presses on the internal surface of the pubis may jam the urethra against it, and thus obstruct the passage either of the urine, or of the catheter. When the head of the foetus has done so, the mode of proceeding is sufficiently obvious and simple: it consists in gently raising, and directing somewhat backwards, the foetal head, with one or two fingers of the left hand introduced into the vagina. Sometimes this alone, even without the introduction of a catheter into the bladder, will suffice, and enable the patient to evacuate her urine. But the pressure of the child's head on a distended bladder often is not confined to a mere interruption of the urethra. From the connexion of the bladder with the uterus, the peritoneal covering being common to both of them, the bladder is liable to follow, and to be distorted by, the motions of the uterus. The foetal head, therefore, in its progress into the pelvis, may press the middle of the distended bladder against the brim of the pelvis, thus dividing the vesicular cavity into two portions, or chambers, one superior and the other inferior. Consequently, one of those cavities (the inferior) may be emptied by the catheter, while the other retains its contents. In such case, the head must be duly, but gently, supported until the catheter shall have emptied both of the divisions, and a male catheter (usually No. 6 or 7) may be required to accomplish the operation. The flexible or India-rubber catheter generally answers sufficiently well for this purpose, and we do not run so much risk of effecting injury with it, through carelessness, as with a long metallic instrument. Though we have spoken of the female urethra as about an inch and a half long, we of course allude to it in its natural and undistorted form. When stretched and altered in its direction by the uterus, it will require the operator to employ a little manual dexterity to follow its irregularity; but, when aware of the circumstan-

ces, he will have but little difficulty in doing so. It is therefore unnecessary in a concise manual, like this, to go into a very minute description of the anatomy of the parts, which the inquiring student will find laid down in works expressly devoted to the structure of the human body.

8. From the relative position of the rectum and the uterus, a collection of fœcal matter in the former, particularly if indurated, presents an obvious impediment to the free passage of the child's head. And, consequently, the pressure of the fœtal cranium within the pelvis may interrupt, or entirely prevent, the fœcal evacuation in a certain stage of labour. Therefore, timely precaution ought to be taken to free the lower intestines before the process of parturition advances, as has been inculcated in the beginning of this chapter. This is far better accomplished by means of an enema, administered with a lavenent syringe, than by internal medicine; though both ought in general to be had recourse to, and, especially in plethoric habits, the internal medicine ought to precede the enema. But the enema is certainly the most effectual for evacuating a loaded rectum. Not to speak of the manifest cleanliness to which such a precaution contributes, it also serves to prepare the genital parts for the different stages of labour, and, therefore, should never be omitted, so soon as the premonitory symptoms of uterine action show themselves. The practitioner can point out all those matters to his patient, and inform her what arrangements she ought to make. The species of enema is of slight importance (unless a very costive habit prevail): a saline one, with a proper proportion of thin gruel, being generally preferable; and it should be repeated until it produce a full operation. This practice seldom fails to facilitate delivery; and in prolonged labours it frequently requires to be repeated. It has a relaxing effect upon the vagina, which all

scientific practitioners know to be of the utmost importance, and a great moderator of the patient's sufferings.

9. Concerning the utility of a band, "binder," or abdominal belt, after the delivery of the child, there (strange to say) has been some difference of opinion among professors of the science of Midwifery. But, at present, few, if any, practitioners object to the propriety of its moderate employment. Too much pressure is manifestly objectionable; but when we merely consult the patient's comfort, and obviate that unpleasant feeling which the removal of the contents of the gravid uterus produces on the abdominal muscles and on respiration, the practice is justified both by reason and experience. Dr. Collins sets the highest value on a well-adjusted binder as a preventative of uterine hæmorrhage; but he thinks that one injudiciously put on is worse than none at all.

10. Most practitioners content themselves with a broad bandage of flannel, calico, or linen, from a yard and a quarter to a yard and a half in length, which they fasten, with large pins, over the uterine region. But Dr. Charles Waller, the judicious editor of Dr. Denman's celebrated *Practice of Midwifery*, very properly advises the abdominal belt to be prepared with buckles and straps, by means of which pressure may be increased or diminished *ad libitum*, and the very ungainly custom of pinning be avoided. He also recommends, in addition to this belt, that a cushion or pad should be provided, to serve as a compress upon the region of the contracting uterus, or rather on its fundus. Nor can we fulfil our duty to the reader without dwelling, with Dr. R. Collins, on the exact manner of adapting the position of the compress and binder to the purpose they are intended to answer. The present is as convenient a place as any to offer a few observations on this important point. As soon as the child has been delivered, in

the manner to be afterwards explained, the hand of the practitioner grasps the abdominal parieties immediately over the region of the fundus uteri. The latter he will feel contracting under his hand, and he is to follow with his grasp this part of the contracting organ, which appears hard and gathered like a ball when every thing is proceeding favorably; his object, we say, is thus to follow the descent of the contracting fundus down into the pelvis, where he is to secure it with the compress, so, as it were, to present a barrier to its again rising into the abdomen. Having nicely adapted the pad or compress with this object, he adjusts the binder over it. But Dr. Collins reminds the practitioner that it is not on the *front* of the uterus, but on the top or fundus, as it is called, that the pressure is to be made. The compress may sometimes require to be composed of several napkins. Some persons prefer soft shamois leather, but the principle of adapting it is of infinitely more importance than the material of which it is composed. In the proper place, will be found a description of the auxiliary means for promoting uterine contraction [47]. Whichever arrangement the practitioner may prefer with regard to the binder, it manifestly ought to be a precautionary measure with him to see to its being provided. It would be well, likewise, if he would take care that such articles as he may require to use in the course of the labour be at hand: namely, some almond or olive oil; tincture of opium, solution of ammonia, or, perhaps, also, carbonate of ammonia, rectified spirits of turpentine, and powdered opium; materials for saline, and, likewise, mucilaginous enemata. For the latter, the mucilage of starch, with the addition of tincture of opium, answers the purpose. Vinegar is proper to be in the room, as it may often be required. In the Appendix we have noticed the customary stimulants, which are usually at hand, and too liberally used. Should Ergot of Rye be necessary, there will be ample

time to obtain it in every town. It is often of the utmost importance to have a vessel fit for a warm bath in the house ; but in ordinary labours this is not required. By attending to the directions given in this chapter, the young practitioner will consult his interests, character, and personal convenience, as well as the very great comfort of his patient.

CHAPTER II.

OF THE VISIT TO THE PUERPERAL CHAMBER.

11. It is, of course, desirable that the practitioner should promptly become acquainted with the exact condition of his patient ; the nature of the presentation ; the state of the parts, whether duly relaxed or otherwise ; the extent to which fever prevails ; and even the disposition and temper of the female under her sufferings. A knowledge of all these will enable him to suit the means at his disposal to the objects in view coolly and judiciously. It is always prudent to proceed early to a manual examination per vaginam ; though this should not be done immediately after the practitioner's entry into the room. It will be better in general for him to engage calmly in conversation with the patient, with respect to the symptoms she has experienced, and to the detail of these he is to lend an attentive ear. By such a method, he will soothe the solicitude and win the confidence of his patient. Though it is far more usual for the medical attendant not to be sent for before the labour has made considerable progress, than to be called upon when nothing but *spurious* pains have been endured,

still the latter circumstance has occurred. By describing the difference between the character of spurious, and that of genuine labour pains, we shall enable the practitioner to be somewhat prepared for the state of the case even before he has made a manual examination.

12. SPURIOUS PAINS, proceeding, as they generally do, from abdominal irritation, are far more continuous than the true labour pains, which always observe a marked intermission. The contraction by which delivery is effected, is of a two-fold nature: first, that of the abdominal muscles pressing upon the entire bulk of the gravid uterus; and, secondly, the contraction of the uterine substance itself. The contraction of the abdominal muscles may move the whole uterus downwards; but it is from the contraction of the uterine fibres we must expect the dilation of the os uteri, and the transmission of the uterine contents into the vagina. Spurious or false pains may proceed from undue fatigue, such as either walking, or even standing too long continued; from an unhealthy state of the bowels, evidenced either by diarrhœa or constipation; from agitation of mind; or, in short, from any thing that tends to bring on, or to aggravate a feverish condition of the system. The puerperal state, indeed, is always more or less febrile—the pulse is excited far above the ordinary standard of health; but then the derangement of all the functions may be such as to mark the case as a really morbid one, in the eyes of an intelligent physician, that is to say, when it is accompanied by such symptoms as in the progress of our observations we shall have to point out. Sometimes the spasmodic contraction of the abdominal muscles requires some discrimination to distinguish it from the true labour pain, but the well-informed practitioner will not long be deceived by it. If there be any doubt, examination *per vaginam* soon puts an end to it. Besides the very prominent characteristic of inter-

mission that the true labour pains present, they usually proceed as follows, viz., they begin in the loins, or in the lower part of the back, and appear to terminate at the pubis, or at the upper part of the thighs. Occasionally, however, this line of progress is inverted; and at times the pain has been as it were isolated in a particular spot, being referred to the back, or the abdomen, or the inferior extremities; affecting that portion of the nervous fibrils which some unknown circumstance has rendered morbidly sensitive. The very marked sympathy which exists between the stomach and the uterus has often occasioned manifest derangement of the former viscus when the latter is in decided action. Vomiting has been found to accompany, if not to bring on, dilation of the os uteri. The brain, and indeed all the nervous system, will, in a highly irritable state, evince a decided participation in the action of the uterus, as puerperal convulsions show; though the latter are generally accompanied by an undue determination of blood to the head. The intervals which occur between true labour pains, are more or less prolonged according to the progress of the labour. The interval may be of twenty minutes, fifteen minutes, ten minutes, or five minutes duration, the pain recurring with astonishing regularity; and this is our voucher that the pains are of the genuine labour kind. But when the pains are effective, that is, when they dilate the os uteri, and protrude the presenting part, the female has frequently some consciousness of their efficiency. She characterizes them as "bearing down" pains, and has a sense that there is some yielding of the resistance to them. But there may be action of the uterine fibres accompanying the contraction of the abdominal muscles, and still not of an efficient character in tending to dilate the os uteri. When the circular fibres of the cervix uteri alone contract, or even its longitudinal fibres, the progress of the os uteri is far from being

satisfactory. The contraction of the circular fibres of the cervix obviously operates as a sphincter, and prevents the presenting part from pressing upon the os uteri, and dilating it. This, however, we cannot be aware of, with any thing approaching to certainty, until we have made a careful manual examination. Should the medical attendant come to the conclusion that the pains are of a spurious character, more especially if they be accompanied by alvine irritation, flatulence, &c. he will endeavour to allay them. This is to be accomplished by quietude, and confinement to the horizontal posture, together with such mild cordials and sedatives as may allay irritation; and also by calming mental agitation, so as to diminish anxiety; the practitioner inculcating both patience and confidence. But one of the leading means, in uterine disburance, is the administration of an enema of starch, with tincture of opium. In the case of violent *spasmodic* contraction of the abdominal muscles, some antispasmodic may be had recourse to; but due attention should previously be paid to the state of the bowels.

EXAMINATION PER VAGINAM.

13. When this is determined upon, the proposal may either be made to the patient herself directly, or through the medium of the nurse, or of any friendly *matron* who happens to be present. But though the presence of such a person as the latter, during the progress of the examination, be both proper and desirable, unmarried females ought to be requested to leave the chamber on such an occasion. The examination should be conducted with the utmost delicacy, and without precipitation. The patient being placed on her left side, at the right side of the bed, the practitioner seats himself behind her, first darkening the room in some degree, and drawing the bed curtains around her. Her knees should be flexed and drawn towards the

abdomen. The fore-finger of the right hand is then to be slowly introduced towards the posterior part of the vagina, and directed to the os uteri. The two leading objects in the examination are to be steadily borne in view; namely, to ascertain the state of the os uteri, and the nature of the presentation. When the labour has made but little progress, the os uteri will be found high up, and near the sacrum, at the back part of the pelvis. At this early period, we are to expect to find it very little, if at all, dilated; but the state of the os uteri is not always uniform with reference to the duration of the labour. Neither is its position always similar in various women, nor even in the same woman on several occasions. At times we find it evenly distended, smooth, and thin at the edges, even before the actual separation of its lips has taken place. At other times it will be more uneven, somewhat pendulous, and rugose. It is occasionally sudden in the alteration of its state. Sometimes its development rapidly and abruptly takes place; at other times it is more gradual, and as it were systematic. At times the os uteri is oblique, being more to one side than the other; and this has been regarded by some obstetricians as presumptive evidence of protracted labour; while others do not entertain much apprehension on this score. It is, however, far more satisfactory when it occupies a middle position than when it is oblique either to the right or the left; and when it is smooth, thin at the edges, and uniformly distended, than when it is pendulous and rugose. Its state will most commonly be influenced by the nature of the presentation, and our first and most natural solicitude is to ascertain the character of the latter. When the fœtal head presents, if our examination be made while the os uteri still remains towards the sacrum, we shall perceive, more especially during a pain, a considerable tumour in front of this (the os uteri), that is to say, between the os and the pubis. This has been termed by

Dr. Burns the "uterine tumour;" but with all deference, we should be disposed to call it the presental tumour. This tumour is broad and unyielding when the head presents, and therefore is a satisfactory token. When the os uteri has sufficiently dilated, to permit the protrusion of the membranes during the continuance of a pain, the examiner must be careful that his finger be not suffered to press against them so as to endanger their premature rupture, and the evacuation of the waters. This he can easily avoid doing, even though he persist in the examination, until the subsidence of the pain. He can, thus, without doing any injury (and the premature discharge of the waters is sometimes a very serious one), ascertain the progress of the os uteri toward dilation during the pain, and also the degree of its collapse after the pain ceases. While the membranes continue entire, the portion which protrudes during a pain through the dilating os uteri greatly diminishes the sufferings of the female, while it more efficaciously promotes the dilation than the immediate contact of the broad and unyielding fœtal head itself would do. This is one reason why we should be solicitous not to occasion a premature rupture of the membranes. But a still more important reason is the propriety, and even the necessity, of retaining the waters *in utero* should the operation of turning be required by an unfavourable presentation. This operation is infinitely more easy, as well as safe, before than after the evacuation of the waters.

14. Though what has been termed the "uterine tumour" or the "tumour of presentation," which term will completely characterize it, be broad and usually quite distinguishable, in a natural presentation, while the os uteri remains high and undilated, towards the sacrum or back part of the pelvis; and, it is said, the tumour may often be perceived there so early as the latter end of the fifth month of pregnancy; still this

tumour, resting upon the anterior part of the distended cervix uteri, becomes gradually narrower as the dilatation of the os uteri proceeds. Of course, the tumour of presentation entirely disappears when the os uteri has undergone complete dilatation, and the head has protruded into the vagina. Consequently, the breadth of this tumour is an index to the progress that the first stage of labour has made. When the tumour is not perceived, the *presumption* is, that the presentation is not a natural one; our prognosis, therefore, ought to be guarded, and we ought to be on the alert to afford assistance immediately on the rupture of the membranes, should that presumption be realized. But it is *possible* that it may turn out to be a head presentation, notwithstanding the absence of the ordinary tumour. A rigid contraction of the circular fibres of the cervix uteri, for instance, may prevent the head from coming in contact with the inferior part of the organ, and thus deprive us of the wished-for evidence at an early period. Until the dilatation of the os uteri be considerably advanced, we should not be justified in rupturing the membranes, either in order to examine into, or rectify the presentation. And here it will be proper to treat of the progress of dilatation, and of the symptoms thereof afforded by manual examination.

15. We have spoken of the occasional obliquity of this uterine appendage (for such the os uteri might without impropriety be termed). Before Midwifery had arrived at its present experience and abstinence from undue interference, it was too often the custom forcibly to rectify the position of the os, when it inclined from a central situation. But this piece of mischievous folly is now given up by judicious practitioners, who content themselves with barely altering the position of the female, making her turn on the side to which the os uteri inclines. But though the rude and forcible traction of the os uteri to a central position be regarded as inadmissible and

greatly annoying to the patient: still some writers on the obstetric art, especially Dr. Burns, we perceive to be not adverse to our giving occasionally gentle and unirritating assistance to the dilating process. Dr. Collins, however, is decidedly hostile to our interfering in the dilatation of the os uteri, without the most urgent necessity imaginable, namely, where the placenta is attached to the os itself, and consequently occasions what is termed “unavoidable hæmorrhage” every time the uterus acts, so that nothing but prompt delivery can rescue the patient from imminent peril. Dr. Collins regards our meddling with the os uteri as fraught with danger to both the mother and the child; and it is by no means improbable, as has been asserted, that, in very irritable females, to do so might bring on puerperal convulsions, as well as spasmodic contractions of the uterus, or even be an exciting cause of uterine hæmorrhage. Having given this necessary caution, we proceed to state, that Dr. Burns, in his very elaborate and popular work on the *Principles of Midwifery*, eighth edition, advises us, when we find the lips of the os uteri slow in clearing the foetal head, to gently aid the progress of the anterior labium with the finger, by helping the former to slide forwards. Even in giving this assistance, we must, however, be greatly guided by the patient’s sensations. Sometimes the slightest touch applied to the os uteri during the first stage of labour causes great irritation, and has frequently been known to provoke vomiting.

16. As Dr. Burns has been very precise in his remarks regarding the various states of the os uteri as a source of information to the practitioner, and a guide to him as to the steps he should pursue, we shall make a satisfactory extract from his valuable work for the information of our readers on this interesting subject. Dr. Burns says:—“We find, in different women, the os uteri in very opposite states. In some, it is thick, soft and dependent like a cylinder; in others, thin and

infundibuliform ; sometimes it is not very early dependent, but the edges of the mouth are on the same plane, like the mouth of a purse ; these edges may be thin or thick, and either of those states may exist with hardness or softness of fibre. In some cases they seem to be swelled, as if they were œdematous, and in this state often combined with œdema of the vulva, or it may proceed from ecchymosis. Now of these conditions some are more favourable than others : a rigid os uteri, with the lips either flat or prominent, is generally a mark of slow labour, for, as long as this state continues, dilatation is tardy ; a thick œdematous feel of the os uteri is also unfavourable ; and usually a projecting or tubulated mouth, especially if the margin be thick and hard, is connected with a more tedious labour, than where the os uteri is flat. In some cases of slow labour, after the projection of the os uteri is developed, its orifice for many hours is scarcely discernible, resembling a dimple or small hard ring, perfectly level with the rest of the uterus."

" But although these observations may assist the prognosis, yet we can never form an opinion perfectly correct ; for a state of the os uteri apparently unfavourable may be speedily exchanged for one very much the reverse, and the labour may be accomplished with unexpected celerity. Our prognosis, therefore, should be very guarded. When the pains produce little apparent effect on the os uteri ; when they are slight and few ; and when the orifice of the uterus is hard and rigid, or thick and puckered during a pain ; or hangs flabby and projecting during a pain ; whilst the lower fibres of the cervix feel, when the finger is introduced within the os uteri, firm and contracted ; or when the os uteri does become flatter during a pain, but falls together and projects when it goes off, and especially if the cervix be rigid ; there is much ground to expect that the labour may be lingering. On the other hand, when the pains are brisk, the os uteri thin and soft, we may expect a more

speedy delivery; but, as in the first case, the unfavourable state of the os uteri may be unexpectedly removed, so, in the second, the pains may become suspended or irregular, and disappoint our hopes. The os uteri seldom dilates equally, in given times, but is more slow at first in opening than afterwards. It has been supposed that if three hours dilate the os uteri one inch, it will require two to dilate it another inch, and other three to dilate it completely. This calculation, however, is subject to great variation, for, in many cases, though it require four hours to dilate the os uteri one inch, a single hour more may be sufficient to finish the whole process."—p. p. 354—55.

17. The os uteri may descend without expanding. This, however, is to be regarded as an unfavourable exception to the general rule, and as evidence that abdominal, rather than uterine action prevails. In general, in proportion as it descends it dilates, the tumour of presentation diminishing in breadth. The os uteri remaining high, whether or not it dilate, but more decidedly in the latter case, indicates some delay in the labour. But it is by no means desirable, that the descent of the os uteri should be too rapid, as a prolapsus might thereby be induced.

18. Neither is an immoderate protrusion of the membranes to be coveted. Their progress into the vagina, as well as the discharge of the uterine waters, ought to bear a steady relation to the progress of the labour. The membranes sometimes hang very low in the vagina during a pain, so as to bear some resemblance to a portion of a bladder, and often appear so very tense that we are in momentary expectation of their giving way, but on the cessation of the pain they will frequently recede entirely. This is usually regarded as indicative of the head being speedily born; but the pains, at this apparently critical moment, may remit, and some delay occur. But we are not invariably to expect this protrusion of the membranes, for sometimes it does not take place. The discharge of the waters,

likewise, is varied in its manner, as well as in the period of its occurrence. Sometimes they will come down with a remarkable gush, and the uterus be as it were at once cleared of the liquor amnii; while at other times the foetal head will interpose an obstacle to the passage of the fluid through the os uteri, and the greater part of the waters will remain above the head of the child, only a small quantity dribbling into the vagina.

19. A very important consideration is the state of the vaginal canal. When we find this cool, relaxed, and freely secreting a mucous fluid, it is a good sign, and promises fairly for a speedy and unobstructed delivery. But when it is hot, dry, and tumid, or unyielding, we cannot hope whatever may be the state of the os uteri, that the labour is near a happy termination. A rigid and unyielding state of both the os uteri and vagina, and their continuing unusually painful to the touch, may demand curative proceedings on the part of the practitioner, to bring them into a more favourable condition. In females advanced in years, and who are in their first confinement, this adverse state of the parts is supposed to be more likely to occur, than in others. But it is generally indicative of too great an accession of the febrile diathesis, and may require venesection, emollient enemata, vapour of warm water applied to the parts, and the administration of antimoniated opiates to remove it. Dr. Collins gives, in his treatise, a formula for a combination of Tartar emetic and opium, which they were in the habit of prescribing in the Dublin Lying-in Hospital, with or without venesection, when rigidity of the parts existed, and in most cases where the febrile diathesis required to be subdued or moderated. The following is the formula in question:

R: Aquæ fontanæ, ℥vi;
 Antimonii potassio-tartratis, gr. iv;
 Aceti opii, m xxx. Fiat mixtura.

Of this mixture two table-spoonfuls were given at first, and

one, at convenient intervals, afterwards, until the patient became more favourably circumstanced. This was found to have a very marked effect, especially on the robust. It was had recourse to before turning; sometimes in breech presentations, where it is so desirable that the parts should be well relaxed, and that the progress of the child through the pelvis should not be too rapid; also as an auxiliary to bleeding in puerperal convulsions, &c. But it was considered indispensable that the bowels should be emptied before it. It will be fortunate for us, under such circumstances as rigidity and irritability of the parts, if the membranes remain unruptured, and the uterus thus be preserved by the presence of the liquor amnii from sharp and uncontrollable action, for delay may then be obtained until the parts become more favourable. When this rigidity has been chiefly if not entirely confined to the external parts, we must be very careful to guard the perinæum from laceration, and to retard the progress of the head as much as is practicable, lest it prematurely force its way through the unyielding os externum. Where rigidity is obstinate, warm baths, and fomentations have been recommended, and even digitalis and nauseating medicines have been suggested as likely to cause relaxation. But these do not promise any very decided advantage; and the sickening medicines may be productive of harm. The above mentioned formula we believe to be as suitable as any thing that can be used.—Oil and even tallow (!) have been introduced into the vagina, but the author does not feel particularly anxious to patronise such practice. To injecting the part with mucilaginous fluids, such as a decoction of linseed, he should be much more disposed to agree. Bleeding is perhaps the only thing that can really be confided in, in such a state of affairs, combined with enemata, diluents, refrigerants, opiates, &c. Venesection will of course be more clearly indicated when the state of the circulation points it out as suitable. The extract of

Belladonna, diluted with oil to the consistence of cream [or in the manner recommended in another part of this work] has been advised as likely to relax the os uteri; but it does not appear to have come into use, though not unlikely from its properties to have some effect under certain conditions. It could, however, promise no advantage when the rigidity was that of the external parts. We shall now speak more particularly of the character of presentations, as this is a very primary consideration for the obstetrician.

NATURAL PRESENTATION.

20. The most favourable presentation is where the head is so placed that the vertex is at first directed towards the left acetabulum. "On a first examination through the os uteri it is gratifying when the upper portion of the parietal bone, a little above the protuberance, meets the examiner's finger. As Dr. Burns observes, "If we carry the finger backward, we feel the sagittal suture,* and tracing that, in the direction of the

* SUTURES AND FONTANELLES.

Even if we did not specifically state it, the importance to a practitioner of an intimate acquaintance with the sutures and fontanelles of the fetal cranium would necessarily be inferred by a perusal of the description of the presentations given in the text. Without accustoming himself to tracing them on the head of a new born infant, thus rendering his touch familiar with them, it is quite impossible that he can become skilful in vaginal examinations. However, it is proper that we should here give a brief account of them: —The sutures are six in number, namely, 1. The *Sagittal Suture*, which extends from the front of the head to the back thereof, uniting the parietal bones. This is a suture of much importance to the obstetrician and a leading guide to him. 2. The *Frontal Suture*, reaches from the *Sagittal* to the root of the nose; in some infantile crania this suture is far more open and perceptible than in others; sometimes it is open throughout even in the full grown fetus;

left acetabulum we feel the posterior fontanelle. The position is oblique in a twofold way: the vertex is lower than the forehead, and the head also enters somewhat sideways into the brim of the pelvis, the one parietal, that which is toward the pelvis,

but generally it is at the superior part of it, where it meets the Sagittal that it is distinguishable to the touch. 3. The *Coronal Suture* proceeds from one side of the head to the other, i. e. from ear to ear, crossing the *Sagittal suture* at right angles, and connecting the frontal bones with the parietal. 4. The *Lambdoidal Suture*, which lies on the back of the head, on the occiput, uniting the parietal bones with the occipital. It is named after the capital letter in the Greek alphabet whose form it is thought to resemble. 5. The two *Squamous*, which are sometimes noticed, and, on each side of the head, unite the squamous portions of the temporal bones with the parietal bones.

The *Fontanelles*.—In the fanciful spirit which so strongly characterised the old anatomists, those parts of the head where the cranial ossification in the fœtus has remained incomplete, have been named fontanelles, from their supposed resemblance to a fountain (*fons*). The greater Fontanelle, or anterior, or rhomboidal, as it is sometimes called from its form, is situated at the point where four sutures, namely, the *Sagittal*, *Frontal*, and the two lateral portions of the *Coronal* meet. At that spot, the upper and anterior angles of the parietal bones, and the contiguous or corresponding corners of the frontal are rounded off or deficient. This occasions an irregular quadrangular vacancy in the osseous plate, remarkably distinct in some fœtal heads, and a very decided guide to the erudite tact of the accoucheur. Dr. Burns says, that “whenever it is felt in an examination we may expect a tedious labour; for the head does not lie in the most favourable position.” The lesser, or posterior Fontanelle, is situated at the angular point where the lines of the lambdoidal Sutures incline to each other. It is smaller than the other, not quite so distinguishable, and of a triangular shape. However, with a little tact it can be readily ascertained. In the Fontanelles a pulsation can often be perceived, and when this is the case it is evidence of the vitality of the child.

We recommend the student to render himself perfectly familiar with the *Sutures* and *Fontanelles*. He can then be at little loss to understand the cranial position in the pelvis.

being the lower; so that the diameter of the entering part is not so great, as the space between the one protuberance and the other, by about a quarter of an inch. The head continues to descend obliquely, with the vertex lower than the forehead, and the chin directed toward, or pressed upon the throat or breast of the child; and it is not until the act of expulsion that it rises or departs from that position. As the head continues to descend, it is still the parietal bone, near the protuberance, which meets the finger, and even when the head is so low as to press upon the perinæum, and be felt at the orifice of the vagina, it is usually that part of the bone which directly presents. At this time the ear is behind the pubis, and nearly on a line with its upper margin, and the brow is level with the linea ilio-pectinea, from behind the acetabulum back to the sacro-iliac junction. When the whole of the cranial portion of the head has entered the cavity of the pelvis, the chin and the cheeks are still above the brim. The end of the nose is on a line with the brim, or a very little above it, and scarcely farther forward than the sacro-iliac junction. The ear is felt still behind the body of the pubis, the parietal protuberance has moved a little more round to the right side, so that it has got nearer the pubal margin of the foramen thyroideum and the vertex has come more forward toward the left ramus of the pubis and ischium. The forcing pains continuing, the perinæum is more distended, and the head brought lower: but it is not the vertex which we feel at the orifice of the vagina, for, till the last, the head is more or less diagonal, and is not turned with the vertex completely forward, till in the very act of expulsion, when the vertex sometimes comes out, and turns directly up between the labia, and then round to one side. At other times the vertex does not come quite round, but passes out obliquely, and the face, when expelled, is directed to the right thigh of the mother."

21. We have copied Dr. Burns' description of what is termed the mechanism of parturition in the natural birth, and inserted it in the text, on account of its being so popular, while we believe it to be sufficiently accurate for general purposes, and a useful guide to the practitioner, both as to the progress which the child has made through the genital canal, and the position of the head where the application of instruments may become necessary. But we shall pronounce no opinion whether the Caledonian Professor be either more original, or more critically exact in his description, than the continental authority whose interesting and scientific statement we have consigned to the note below.*

* MECHANISM OF PARTURITION.

The researches of Professor Naeglè on this subject have proved so attractive and are really so interesting to the inquiring obstetrician, that we have great pleasure in quoting the leading views of this celebrated German Accoucheur, as they have been given to the British public in the able translation by Dr. Edward Rigby of the work entitled "An Essay on the Mechanism of Parturition."

In the German school, only four positions of the cranial, or as it is sometimes loosely styled, the "vertex" presentation, are recognised. Those positions are as follow:—

"The *first* with the posterior fontanelle towards the left foramen ovale, the sagital suture corresponding to the right oblique diameter of the pelvis.

"The *second* with the posterior fontanelle towards the right foramen ovale.

"The *third* the reverse of the first, with the anterior fontanelle towards the left foramen ovale.

"The *fourth* the reverse of the second, with the anterior fontanelle towards the right foramen ovale.

Baudelocque, in conformity with the French and English views, assigns *six* different species of those cranial positions. The Germans dispute the accuracy of Baudelocque's arrangement, but it is fit that our readers should be made acquainted with the opinions of a man so celebrated as Baudelocque.

According to him, therefore, the first two cranial positions

Bountiful nature, or, to speak in language more appropriate, the Omnificent and merciful Author thereof, has so ordered it that the above, which is considered the most favourable position in which the child can present itself, should also be the

are the same as those of the German schools; but he describes his *third* position to be with the sagital suture parallel to the conjugate diameter of the pelvis, the posterior fontanelle towards the symphysis pubis; the *fourth* and *fifth* of his recognised positions correspond to the third and fourth positions of the German schools; and his *sixth* position is with the sagital suture parallel to the conjugate, with the anterior fontanelle towards the symphysis pubis: the two positions of the head where the sagital suture corresponds to the conjugate diameter of the pelvis, viz. the third and sixth of Baudelocque, are considered impossible by the Germans; and Dr. Edward Rigby appears to acquiesce in that decision. Not that Dr. Rigby imagines they do not sometimes occur; but he says this can happen merely in cases where the child has either been born prematurely, or been dead for some time previous to its birth.

Now it is thought by some able authorities that the cranial position No. 3. of the German schools does really occur much more frequently than generally was supposed; but that, as the labour proceeded, it changed into the *second* position, and the child being afterwards born in the latter position, led to the vulgar error.

"In examining such presentations," remarks Dr. Rigby's little work, "the accoucheur must not always expect to feel the anterior fontanelle in the vicinity of the left acetabulum, for not unfrequently he will not be able to reach it; if this be the case, he must direct his finger towards the right sacro-iliac synchondrosis, where, following the course of the sagital suture, he will find the posterior fontanelle situated lower than the anterior one, and therefore capable of being reached with much less difficulty: under such circumstances," observes the author, the horizontal position of the patient on her left side is very unfavourable for examination; while lying in the supine posture, or standing, will be found to be more convenient."

Dr. Rigby, while he employs the term "vertex position," in conformity with the French and English phraseology, makes an apology for so doing, in as much as he does not believe the term to be strictly correct, "since," he adds, "at no period of labour is the vertex the most dependent." Consequently,

most usual presentation. But the head may nevertheless present in a less favourable manner. When, instead of the vertex being in the direction of the left acetabulum, or foramen thyroideum, it is turned to the right, the labour is found to be

wherever the term "vertex position" may occur in the course of this note, the reader will regard it as equivalent to "cranial."

Professor Naeglè says that it agrees with his experience, that the cranial and the face are the only positions in which the head of a full grown fœtus presents at birth. Therefore, with him cranial position and face position are placed in contradistinction.

Professor Naeglè speaks in a strain of great and well-founded admiration of the curious mechanism by which the fœtus is expelled; and observes that it completes its passage with admirable precision." On an accurate knowledge of this "mechanism," the professor sets a high value as an important guide for the accomplished accoucheur; and he appears to have taken infinite pains himself to master all the intricacies of the subject. He, however, complains that too many professors of the Obstetric art have turned their backs on nature, instead of vigilantly and modestly tracing her operations. When they chanced to fall in with nature's track, and were nearly approaching the truth, they neglected the opportunity offered of penetrating into the mystery, under the false persuasion that they were in full possession of it. Instead of studying the laws of nature by long and laborious observation, they presumed to dictate to her.

The Professor declares that by fanciful theories, invention of instruments, &c., instead of copying after nature's mechanism, obstetricians have retarded the progress of their art. Hence, he thinks, the contrariety of opinions often witnessed among obstetrical practitioners when the question is the propriety or impropriety of having recourse to artificial measures in parturition.

In that presentation of the head which occurs most frequently, says Professor Naeglè, the head presents not with the occiput but with the vertex; in fact, with the right parietal bone, the posterior fontanelle being turned towards the left acetabulum at the time of labour.

Upon examination at the beginning of the second stage of labour [The Germans divide the period of labour into *five* stages. The *first* begins with the first contractions of the

more tedious. For this tediousness there are several reasons. The very position of the rectum, which runs somewhat obliquely at the left side of the sacrum, would present an obstacle to the free passage of the forehead, which would come into contact

uterus ; the *second* commences with the opening of the os uteri ; the *third* with the rupture of the membranes ; the *fourth* with the birth of the child ; and the *fifth* with the expulsion of the placenta] upon examination, therefore, when the os uteri becomes pervious, and in those who have already borne children at the first approach of the pains [expulsive], and even earlier the finger which is introduced in the direction of the central or middle line of the pelvic cavity, and brought in contact with the head, will touch the right parietal bone, in the vicinity of its tuber ; the two fontanelles are mostly found situated at an equal height, sometimes the anterior, but most frequently the posterior, one a little lower. At the entrance of the pelvis, the head does not take a perpendicular, but a perfectly oblique direction, so that the part which lies lowest or deepest, is neither the vertex nor the sagital suture, but the right parietal bone. The sagital suture is much nearer to the promontorium of the sacrum than to the os pubis, and divides the os uteri, which projects backwards and generally somewhat to the left, across into two very unequal segments. Under certain circumstances [where the liquor amnii is very scanty, or where it has escaped too early, in short generally where the head presses hard upon the inferior part of the uterus, or where the uterus contracts tightly upon it ; also where there is a peculiar rigidity and tension of the os uteri, which continues even during the interval of the pains, and depends upon an irregular activity of the organ, and under some other circumstances] a swelling of the integuments of the head frequently forms soon after the os uteri has begun to dilate ; which, in the further progress of labour, where the os uteri changes its state, its reaction, and also the head its position against it, by degrees again disappears ; nevertheless, as the os uteri dilates, it is still for some time capable of becoming felt, although become much softer. This swelling (in that position of the head which is now the subject of discussion) is situated upon the *right* parietal bone, close to its upper edge, and equally distant from both angles : a small piece sometimes extends over the sagital suture and the other parietal bone ; its circumference depends upon the degree of

with it in the latter form of presentation. But still, though the direction of the vertex to the right be regarded as less favourable than to the left acetabulum, in a well-formed pelvis, the powers of nature are sufficient to overcome the difficulty, without

dilation which the os uteri had attained. The higher the head is, the nearer its long diameter corresponds to the lateral diameter of the pelvis, and the more oblique is its direction; for which reason the right ear can generally be felt behind the pubis without difficulty, which would not be the case if the head had a perpendicular direction, or presented at the time of labour with the occiput forward (as is still asserted by many, the most of whom consider the vertex presentations as belonging to the irregular and less favourable direction of the head, and as requiring for the successful termination by the natural powers unusually favourable, or at least much more favourable circumstances than the presentations of the occiput do). One may easily convince himself, continues Professor Naeglè, of what has just been observed, by examining those who have already borne several children, in whom the os uteri begins to open much earlier; and also in first pregnancies, before the os uteri is sufficiently open to allow the tip of the finger to pass, and where the lower segment of the uterus is sufficiently expanded and thin: the tuber parietale, which lies forward, is generally not to be mistaken on examination through the walls of the vagina; even the sagittal suture may sometimes be felt through the uterine parietes.

As the head presses lower into the entrance of the pelvis, the posterior fontanelle commonly descends more in proportion than the anterior one does; this however is by no means always the case, for the relation between the two fontanelles is sometimes reversed without the slightest hindrance to the progress of the labour.

This revolving on its lateral axis takes place especially where the head, as it advances, experiences rather more than the usual degree of opposition from the hard or soft passages; when this is in a greater degree, it is the result of certain mal-formation of the pelvic entrance: it does not, however, belong to the present subject, for this treatise is confined solely to the progress of natural labour. When the head has advanced through the entrance of the pelvis with the greatest circumference which it presents to it, the two fontanelles are again to be felt at an

artificial aid. Yet, in the opinion of Dr. Burns and others, as we shall hereafter point out, though not in the opinion of all professors of the Obstetrical art, if this mal-position be early discovered, it easily may and ought to be rectified.

equal height. On account of the oblique position of the head the greatest width of the cranium (from one tuber parietale to the other), as well as that of its basis, can never during its passage coincide with the diameters of the pelvic entrance.

As the head advances through the upper aperture, and engages in the cavity of the pelvis, the occipital fontanelle in general remains corresponding to the left obturator foramen, and the head still preserves this position if it have already reached the pelvic cavity, and be approaching the external passage. That the head, as it sinks into the pelvic cavity, should take such a position in it, that the occipital fontanelle is found corresponding to the arch, or immediately behind the symphysis pubis, as is universally asserted in the systems, manuals, and other writings on midwifery is what (says Professor N.) in no wise accords with the result of my observations. When the head has sunk completely into the cavity of the pelvis, and approaches the external opening, the posterior fontanelle is still found corresponding to the left obturator foramen. If the finger be introduced nearly in the centre of the pubal arch, in the direction of an imaginary median line of the pelvic cavity continued forwards or outwards, its point will touch pretty exactly upon the middle of the superior and posterior quarter, sometimes the middle of the posterior half of the right parietal bone. If a swelling of the cranial integuments have not already been produced at an earlier period, by the close contraction of the lower segment of the uterus upon the head as it advances further into the cavity of the pelvis (exactly where they are compressed into wrinkles), and if the head continue for a considerable time in this position (which is generally the case in women pregnant with their first child, &c.), a tumour is now for the first time observed upon the posterior and superior quarter of the right parietal bone, viz. the part that lies behind or corresponding to the arch of the pubis.

To the left of this tumour and above it (whence those who have not had much practice in touching may easily be misled, and think that the head has already engaged in the external passage), the posterior fontanelle is plainly felt at a little dis-

It is thought by some persons that another position of the head, namely, where the forehead, instead of the vertex, is turned to the left acetabulum, is more frequent than the last-mentioned. Dr. Burns says, that, when this presentation takes

tance, still corresponding to the left foramen ovale, and free from all swelling of the integuments.

By continued pressure of the uterine contractions, the posterior fontanelle at last gradually moves itself by slight degrees; repeated at equal intervals, in a direction from left to right (frequently more or less from above downwards), and the occipital bone advances from the side of the pelvis under the arch of the pubis. It is not, however, the centre of the occiput that advances under the pubal arch, but the head approaches the os externum, with the posterior and superior part of the right parietal bone, and remains in this position until it has passed through the outlet of the pelvis with the greatest circumference which it opposes to it, where it then turns itself with the face completely towards the right thigh of the mother. When the head is engaged in the external passages, and we trace the sagittal suture with the point of the finger from the posterior fontanelle, it will during examination take the direction of a line drawn from the left descending ramus of the pubis to the right ascending one of the ischias; it is, in short, the posterior and upper part of the right parietal bone which passes first, through the os externum. According to my observations (says Professor Naegle) the head does not complete the revolution upon its perpendicular axis from left to right, or in other words the change from its oblique position to that where the face is directed towards the hollow of the sacrum: not even when it passes through the os externum with the greatest circumference which it offers to it, *viz.* a circumference which is not taken according to its lateral diameter (*viz.* from one parietal protuberance to the other), but a circumference which intersects the small and great diameter of the head at an acute angle. If in a labour that proceeds sufficiently slowly, whether it be a woman pregnant of her first child, or one that has already borne several children, we keep our finger in contact with the posterior fontanelle, from the time that the head enters the external passages till it is born, we find that it usually remains directed towards the left side, until the head has entirely cleared itself. We can easily convince ourselves that this is the case by tracing with the point of our finger along the sagittal suture from the poste-

place, "After some time the vertex descends a little lower, so that the head comes down a little more obliquely than it was placed at first, and we feel more easily the posterior fontanelle. But the part which we touch most readily," continues Dr.

rior fontanelle, when the head is beginning to distend the os externum, and during an interval of the pains: it will not be found following the direction of the central line of the os sacrum but obliquely from left to right.

What has just been said may be observed most distinctly in cases (especially in women, pregnant for the first time, or in persons where the perinæum has not been injured by previous labours) where the head continues for some time at the os externum, and where it remains stationary during the interval of one or two pains, with the greatest circumference encircled by the labia.

In this position, the sagittal suture will not be found directed towards the posterior or lower extremity of the os externum (commis. poster.), but crossing the right labium in an oblique direction from left to right, at some distance from its posterior or lower extremity, and the right tuber parietale will be distinctly felt clearing the labia some time before the left. All this will be observed to the best advantage if the patient lie upon her left side: there is, in fact, no position which favours the manner in which the head passes through the outlet of the pelvis (and which I have just described) so much as this, and which is so beneficial and certain for the mother. Under these circumstances any supporting of the perinæum (says Professor Naegele) is unnecessary, and the attention of the accoucheur is not disturbed, &c.

[In a note attached to Professor Naegele's little work, the advantage of this (our usual posture for parturition) is strongly insisted on, and the increase of pain noticed which females had experienced by changing from the left side to the back.]

If the head remain some time pressed against the distended vagina, without actually advancing under the arch of the pubis, or approaching the external opening, and by a rapid increase in the intensity of the pains (as is sometimes the case) it afterwards clear the passages with unusual celerity, the swelling of the integuments which the child brings with it (of which we have previously spoken), will be found limited to the posterior and upper quarter of the right parietal bone. If, however, the advance through the external passages follow in the usual manner,

Burns, "at an early stage of the presentation, is the upper and posterior part of the left parietal bone, according as the head has turned more or less round. Then, as the labour advances, the parietal protuberance comes more round, and is better felt,

sufficiently slow, a swelling, *viz.* the common caput succedaneum, forms itself (if there were not one already, or one that was capable of being distinguished from the swelling that already existed) during the passage of the head through the external meatus, at that part of it which is encircled by the opposing vagina, the basis of which, for the most part, covers the right parietal bone and a part of the occiput, engaging the half of it, and generally merely the edge of the posterior fontanelle.

Johnson had a better idea of the manner in which the head advances through the cavity of the pelvis than many long after him.

Professor Naeplè proceeds to state that after that presentation of the head which is mentioned as most common, and which is termed the *first* position, where the head at the time of labour is directed with its great diameter more or less in the right oblique diameter of the pelvic entrance (*viz.* running from the right side posteriorly to the left side anteriorly), and the occipital fontanelle corresponding to the left acetabulum, should that position of the head be the next in point of frequency which has uniformly been termed by authors the *second*, where the great diameter of the head, runs corresponding more or less to the left oblique diameter of the pelvis, and the occipital fontanelle approaches to the vicinity of the right acetabulum; still less frequent should those be, which are still named according to most of the latter German authors of midwifery the *third* and *fourth* species of head or vertex presentation; namely, where the head at the time of labour takes a similar direction as in the two former, excepting that the position of the two fontanelles is reversed, *viz.* in the *third* position, the great fontanelle is turned towards the left, and in the *fourth* towards the right acetabulum. By some, the two latter positions are considered as irregular.

Now this is an opinion which Professor Naeplè cannot agree to. His experience has forced him to come to a very different conclusion from the *dicta* laid down by a multitude of writers on these points. He finds by referring to memoranda of practice, taken from a great number of labour cases, (by others), that the *second* position of the 'vertex' is said to occur, with

and ultimately it, or the vertex, turns out from the vagina, as in a natural labour, but the face of the child is laid by the side of the left thigh." This is deemed productive of more tedious labour than the natural presentation, and therefore ought (ac-

respect to its frequency in proportion to the *first*, nearly as 1 to $4\frac{3}{4}$; on the other hand the *third* to the *first*, as 1 to 346. In another series of observations, the number of cases of the *second* position were in proportion to the *first* as 1 to $2\frac{6}{7}$, and of the *third* as 1 to $17\frac{1}{2}$. In another series of 269 cases of head presentation, where parturition was completed by the natural efforts alone, in 213 the head during labour took the direction of the *first* position, and in the remaining 59 cases the *second* position: giving nearly the proportion of 1 to 4. These calculations are taken from the records of other practitioners; but after the most careful and attentive observations possible, Professor Naeglè has come to the conclusion, that the *third* position of the *vertex* is, after the *first*, by far the most frequent in occurrence of all the head presentations; on the other hand, the second position of the head, which has been supposed to be so frequent, occurs very rarely! Thus, for example, out of 100 labours, the professor "carefully observed" the occurrence in the *third* position in 29 cases. Of 36 labours, he counted 22 in the *first* position, 11 with the *third*, 2 presentations of the nates, and 1 of the face. In fact, according to his estimate, the proportion of the *third* position to the *first* in point of frequency is as 1 to $2\frac{1}{2}$. None of the other presentations of the head can therefore, in his opinion, be compared with the *third* in point of frequency to the *first*; but of them the face presentations have been by no means the least frequent.

Now it must be acknowledged that such striking discrepancies in the evidence are nearly sufficient to shake one's confidence and make him regard testimony so discordant with a strong spirit of scepticism, or give up all hope of arriving safely at the genuine facts of the mechanism of parturition. But, we are happy to add that Professor Naeglè's patient research has, in a great measure, if not *in toto*, enabled him to explain the difficulty and reconcile the contradictions, without compromising the honour and integrity of science, or taxing conflicting professors with deliberate intention fraudulently to sacrifice truth to adopted theories. In the case in question, namely, the *mis-taking* (for that is the main question) the second German position of the cranium "*vertex*," for the *third*, the Professor has

according to the doctrine of those accoucheurs who interfere in such cases) to be rectified if discovered in time, as we shall point out in the sequel. The crown of the head, or the fontanelle, may also present. We are directed to satisfy ourselves

quite satisfied our mind that the mistake might most readily be made unless several precautions be steadily borne in view, and the time for making the examination be regulated by a prudent regard to certain spontaneous changes of position which nature effects; and this is so important a consideration, and so directly involves practical procedure, bearing strongly on the question of rectifying supposed mal-positions; that all readers who have a thirst for sound information will expect us to be somewhat explicit on the point.

According to Professor Naeglè, then, a cranium may really present in the first instance in the *third* German position, and either be mistaken for another position through some obscurity in the marks of diagnosis, unless the examiner be both vigilant and well versed in the method of making the discrimination; or the *third* position may spontaneously change into the *second*, by means of that screwing-like process, or revolving motion, with which the foetus passes through the pelvic cavity, proceeding necessarily in "the line of least resistance." This *spontaneous* change of position may take place, backwards and forwards, that is to say, the originally *third* position may become the *second*, and nevertheless return to its original character again at another period of the process. Here therefore the whole discrepancy is explained, and the question of caution and exactness of examination remains for the consideration of the accomplished accoucheur. Professor Naeglè has made this very clear to us, and we are consequently prepared to receive without any misgivings the inference which he draws from his own experience, though it be very much opposed to the adopted notions of many obstetricians of great eminence and unquestionable honesty. He says—"From the observations I have hitherto made, I have considered the *first* and *third* (German) positions of the 'vertex' as the usual head presentations, and the rest unusual, the most frequent of which were those of the face; still less so was the *fourth* position of the vertex; and rarest of all, the direction of the head in the conjugate diameter of the pelvis (which not long ago was considered the only correct presentation, *situs capitis rectus et equus*), and the second position of the vertex. How the black-letter gentry will stare at this!

with regard to this by tracing with our finger the coronal suture, so as to determine whether the frontal bones lie before or behind. This last-mentioned position is likewise considered to be a source of delay, consequently the advocates for rectifying all unfavourable divergence from the natural *présentation*, advise us to set to

Well, there is also another established opinion, or prejudice, which the learned Professor vigorously combats; and that is the notion that in the *third* and *fourth* 'vertex' presentations, the occiput, as the head advances more into the pelvic cavity, is uniformly turned into the hollow of the sacrum, and that the head comes through the external passage with the face directed forwards and upwards; that the mechanism of labour [under such circumstances] is in general more difficult; that these species of labour require more (and according to some unusually) favourable proportions, as to the space between the head and the pelvis, &c.—than the *first*, in order that they may be completed by the natural powers without danger and injury; that nevertheless *there are sometimes cases*, where the occiput turns forward instead of backward, and the head disengages itself in the usual manner.

And here we must not overlook a note added by the able translator, or perhaps copied from the original of Naeglé himself. In that note, the opinion of a most eminent accoucheur is quoted, namely, that "In the third position of the vertex which happens [i. e. according to the general notion] far less frequently than the second, the head always enters the pelvic cavity with the occiput lowest; it then begins to turn with the occiput into the hollow of the sacrum, the face being directed close behind the symphysis pubis, while the vertex with the occiput followed by the nape of the neck, slowly and usually with great difficulty disengages itself from the perinæum." Speaking of the manner in which the head disengages itself from the external passage, the note questions the accuracy of some of the generally received explanations, for instance, some authorities would have us believe that this favourable but unusual movement as above described, occurs especially or exclusively in the *fourth* position of the vertex; and we are told that the rectum is the cause why the occiput is sometimes turned forwards, instead of into the hollow of the sacrum. The tendency or rather effect of such prejudiced notions, was to make professors sound the alarm with regard to supposed difficulties that were to be surmounted in parturition from what they deemed *irregular* positions of the head; but which Professor Naeglé regards as

rights a presentation of the crown ; the face being sometimes turned to the sacro-iliac articulation.

24. The presentation of the crown of the head may either take place, with the face directed toward the pubis or the sacrum.

unattended with any such terrific irregularity or danger. The accomplished M. Baudelocque himself has not altogether escaped from the perturbation of those bugbears. He congratulates women on the supposed infrequency of those so-called mal-positions. Now the prevalence of such notions, if so unfounded, as we think Professor Naeglè shows them to be, directly leads to officious, meddling, and therefore mischievous use of instruments.

Well, we should pause before we turn the deaf ear to Dr. Naeglè's assurances where he says that he is *thoroughly* convinced, that in cases of the *third* and *fourth* positions of the head and vertex [the great bugbears] in the most advanced state of labour, the occiput is *not* usually turned into the hollow of the sacrum, but that in cases of the *third* position of the vertex, where the labour has advanced considerably, the posterior fontanelle is turned from the vicinity of the right sacro-iliac synchondrosis to the right foramen ovale, and in the fourth position from the left sacro-iliac synchondrosis to the left foramen ovale, and in this manner it clears the external passages ; that this change of the *third* vertex position into the second, and of the *fourth* into the *first*, requires no peculiarly favourable circumstances, and that these species of labour can be completed under the most usual proportions of the active and passive momenta, which relate to the mechanism of child birth, by the natural means, in the same time, with the same expense of strength, without greater difficulty, &c., than when the head takes the direction of the first or most common position."

Indeed, the data with which Professor Naeglè furnishes us are calculated to render it rather dubious that the *first* position occurs by any means so frequently as is commonly imagined. And with regard to the imaginative unfavourable circumstances attending the *third* position, he states facts which must go a great way to dispel all apprehension. He tells us that in 96 cases of the *third* vertex position recorded in his note-book, and observed with particular care, he remarked the head three times to come through the external passages with the face upward or forward ; in every one of the other cases, the turning of the head followed, and he saw the same undisturbed process and

It is by tracing the sutures we are to become certain of the exact nature of those presentations; and unless we know them accurately, we cannot, however facile the operation may be, place the head in the natural position. A presentation of the side

successful completion in cases of first labour, as well as in those of persons who had already borne several children; in young women, as well as those who were more advanced in years; in cases where little liquor amnii was present; where the abdomen was pendulous, or where it was not; where the pains were powerful, or where they were weak; where the progress of the labour was either quick or slow; or where the patient during labour had lain on her back or side, &c. he sums up by emphatically adding:—"According to my observations, therefore, the process which has been considered as a regular phenomenon, is a *deviation*; and exactly that which has been esteemed a deviation from the usual course and rule, is *perfectly regular*."

The Professor goes on to describe with his accustomed scientific exactness the manner in which his observations have perceived the head in the *third* vertex position to move through the cavity of the pelvis.

At the beginning of the second [German] stage of labour, and, in those who have already borne children—or even earlier, the great fontanelle is felt directed towards the left acetabulum, and the smaller one to the right sacro-iliac synchondrosis, nearly at an equal height; sometimes the one, sometimes the other being reached with greater facility. [It should be remembered, however, that when the head is high up, the *third* and *first* positions are liable to be mistaken for each other. An appeal to the sagittal suture does not of itself decide the point. For diagnosis, therefore, the examiner must depend on which fontanelle he touches, and whether it be directed forward to the right or to the left. Sometimes, when the examination is made with the index finger of the right hand, he cannot so well accomplish his object as with the ulnar side of the last joint of that finger.]

As the *right* parietal protuberance in the *first* cranial position is the most depending part, so in this case is the *left*. When the point of the finger is brought in contact with the head, in the direction of the central line of the pelvic cavity, it touches the protuberance of this bone. As the head continues to press further through the upper aperture and cavity of the pelvis

of the head is said to be rare; when it does occur it is to be recognised by the ear. The occiput may present, and is not difficult to be recognised, both from its shape, the lambdoidal suture, and the immediate vicinity of the neck.

(during which the left parietal bone constantly stands the lower,) the posterior fontanelle usually sinks in a greater degree backwards than is the case in first positions of the head. The posterior fontanelle, at this period of the course which the head has to take, is easily reached; the great [anterior] fontanelle less so. I have, however, not unfrequently found the contrary, without the smallest increase of difficulty to the process of the labour. As the head enters and presses through the superior aperture of the pelvis, the anterior fontanelle in this case corresponds always to the left foramen ovale, as the posterior one does in the *first* position; and *as soon as the head has engaged in the cavity of the pelvis*, the great fontanelle turns towards the descending ramus of the left os ischium, and both can be felt at an equal height as to each other. As soon as the head experiences the resistance which the inferior part of the pelvic cavity opposes to it, or in other words, the oblique surface which is formed by the lower end of the os sacrum, by the os coccygis, the ischiadic ligaments, &c., by which it is compelled to move from its position backwards, in a direction forward, it turns by degrees with its great diameter into the left oblique diameter of the pelvic cavity; i. e. the posterior fontanelle is directed to the right foramen ovale, and as the head approaches nearer and nearer to the inferior aperture, it is the posterior and superior quarter of the left parietal bone, which is felt in the cavity of pelvis opposite to the pubal arch; so that when the point of the finger is introduced under and almost perpendicular to the symphysis pubis, it touches nearly the middle of the superior and posterior quarter of the left parietal bone; and this is precisely the part, as the head advances further, which first distends the labia, with which the head first enters the external passage, and the spot upon which the swelling of the integuments forms itself.

As, in cases of first position of the head, the posterior fontanelle is usually directed to the *left* when the head passes the external passages, so in this case it is mostly directed to the *right*.

If the head be already born, the face turns, (according to Professor Naegle's observations on this [the *third*] species of

25. In a face presentation, the chin is most commonly, it is said, turned to the right acetabulum, though it has occasionally been directed to the left. The forehead in this presentation is usually somewhat lower than the chin, and directed to the

vertex positions) by far more frequently to left than to the right thigh of the mother.

The grand cause of the error regarding the supposed greater frequency of the *second* than the third vertex position, Professor Naegle finds no difficulty in pointing out. The change (spontaneously) from the third position, to the one in which the head stands exactly right and left, and again from this into the *second* vertex position (during which it describes the fourth of a circle), is owing to frequently repeated rotary motions. Now those rotary motions being occasioned by the propelling power of the uterus overcoming the degree of pelvic resistance opposed to it, it necessarily follows that as such propelling power ceases (or the pains intermit) the pelvic resistance continuing the same, a sort of a counter-revolution of the head takes place, so that if the examiner do not continue his finger *in situ*, so as to become sensible of the head having revolved backward during the absence of the pain, he will, just before the next pain commences, be liable to mistake with regard to the exact nature of the position. According, therefore, to the period at which he introduces the finger, he may find the great diameter of the head (at one time) in the great oblique, or (at another time) in the lateral diameter, and then in the left oblique diameter of the pelvic cavity. This is all reasonable.

Now it appears that this rotary screwing-like motion of the head as it advances, usually takes place much more quickly as the pain comes on, than does the retrograde motion when the pain ceases; in other words, the active agency of the uterus evinces itself more rapidly, than does the passive resistance of the pelvis; so that the head is some time before it draws back to its former position and direction. In the interval between two pains, Professor Naegle usually found the head at the greatest distance from the position it had taken during the height of the preceding pain. To obtain a correct idea of all this, it is necessary for a person to keep his finger in contact with the foetal cranium both during a pain and during its intermission.

Here, then, is the grand source of the conflicting nature of the opinions; especially where, owing to the head being high

sacro-iliac junction of course opposite to that to which the chin points. There cannot be much difficulty in discovering a face presentation, as the features characterize it. This presentation, though not a *serious* obstacle to delivery, is, however,

up, a satisfactory examination had not been made at an early period, perhaps from the membranes continuing distended during the intervals of the pains, and obscuring the diagnostic signs. Professor Naegle seems very confident that this is the reason why so many of his professional brethren have fallen into the erroneous opinion of the *third* position being an irregular, and unfavourable one, of much rarer occurrence than the *second*—but a decided error he considers this opinion to be, and one calculated to prompt needless interference. It is unnecessary, however, to follow the Professor further in the additional confirmation he offers of his opinion, i. e. that the *third* position (originally) is a very frequent position, and one by no means to be regarded as adverse. Sometimes, in keeping a record of labours, the obstetrician will find the *third* position to alternate with the *first*; while he will at other times perceive that several labours occur in the *first* position in succession, without one in the *third* intervening. In a single month, the Professor experienced six *first* position cases one after the other, while eleven of the *third* position were enumerated.

Many professors have declared that the species of *spontaneous* amendment in the positions of the head,—where the occiput directed to the right sacro-iliac synchondrosis turns to the right side, and then forward towards the right foramen ovale, occurs far less frequently than that where the occiput directed backwards and to the left moves towards the left side and then forwards; but this Professor Naegle decidedly regards as “a great error.” He fears that too many of the favourite theories have been concocted, not on *data* drawn from an accurate observation of nature’s operations, but in the closet of the speculator.

Having proceeded to correct popular (or rather professional) errors regarding the *third* vertex position, and pointed out the frequent *spontaneous* change of that position into the *second*; Professor Naegle quotes the eminent Dr. W. J. Schmidt to show that the change into the usual position which the head makes as it enters the pelvis obliquely with the face directed forwards, occurs perhaps more frequently than many seem to be aware of. But the Professor seems to think many of the cases brought forward by writers in support of their favourite theories

one in which, from the bones of the face being more unyielding than those of the cranium with its sutures, unpleasant pressure may occur, and some injury to the child. Certain obstetricians have gone so far as to advise turning in facial presentations ;

as imperfectly described, or cut out to accommodate their pre-arranged principles.

It had been asserted by influential authorities, that, in cases of the *third* and *fourth* vertex positions, the occiput during the course of the labour was usually directed to the hollow of the sacrum, in which place the head was supposed to experience difficulty in entering and passing through the inferior aperture of the pelvis, arising from the difference in the curve of the forehead to that of the occiput, requiring for the completion of labour by the natural powers more than the usual proportions.

Now Professor Naegle says that the similarity of the mechanism of labour in cases of the third to that of the first or most usual position of the head, with respect to the first, second, and *fourth* periods [stages] (if we except its reversed direction) has made his description shorter in the present place than it otherwise should have been, and permits him to refer to what has been said on the subject for points affecting the positions of which he has not so fully treated as of the first and third. In a manner analagous to what has been described as taking place in a *spontaneous* change from the *third* to the *second*, will the transition from the *fourth* to the *first* be accomplished : the rotation of the head from left to right being effected by the natural powers—as in the other instance rotation proceeded from right to left.

With regard to the swelling on the cranial integuments, before explained, this occurs in cases of the *third* position as well as in cases of the *first*, under the same circumstances and in the same manner, the only difference is that in the one case [in the *third* position] it is formed on the *left*, in the other [the *first* position] on the *right* parietal bone. But Professor Naegle thinks that the circumstances which occasion this swelling occur more rarely in the *third* than in the *first* position. [Some cases illustrative of those points are given in Dr. Rigby's valuable translation of Professor Naegle's curious work, but we must refer the inquiring reader to Dr. Rigby's more detailed account, as it is inconsistent with our arrangement to plunge too far into minutiae.]

Where, as in the *first* vertex position, the integumental

but others are of opinion that these are not cases for turning, but rather for rectifying the position of the head; and, indeed, the latter, taking every probable contingency into calculation, appears to us to be accompanied with less difficulty than the

swelling is confined to the right bone, and occupies chiefly the superior and posterior quarter of that bone; so in like manner do we find in the *third* position a similar development on the left bone. In like manner, as the right half of the cranium is more elevated immediately after a labour in the *first* position, and the right parietal bone stands higher than the left: so in the *third* position is the case exactly the contrary. It is not easy for any one who attends to those diagnostic marks to mistake the one position for the other, and these two appearances (*the form of the head, and the situation of the swelling of the scalp*), says Professor Naeglè, are so remarkable and striking, that if a person have not examined during the labour, he would generally be enabled to decide them, whether the head had taken the direction of the *first* or *third* position, if the course of the labour, as is requisite for the healthy state of that function, had been sufficiently slow. In rapid labours, however, and where the head is unusually small, or the cranial bones incompletely developed, soft and yielding, so that the body [foetus] in its passage does not experience the ordinary pressure or resistance, “the picture of the mechanism becomes indistinct and defaced.” Under such circumstances we sometimes find no traces of the swelling of the cranial integuments. The head, though it may have taken the direction of either the third or fourth position, does not always make that turn [as described], but comes through the external passage, with the forehead forwards or upwards. Likewise, as the Professor observes, the shoulders, or in nates presentations the hips, are pressed (sometimes) through the inferior aperture of the pelvis with the greatest breadth in the lateral diameter.

Now, though Professor Naeglè does not expressly forbid all interference in the way of ‘rectifying’ a presentation; there can be no doubt that the whole tenor of his observations is to discourage that practice. He is no friend to expediting parturition, and seems to think that nature, for wise purposes, and with the best effects, has interposed temporary obstacles to the free passage of the foetus, which impatient accoucheurs often devise artificial means to remove.

As to face presentations, Professor Naeglè views these with

former. There are three or four other varieties of facial presentation described by writers on midwifery, namely, when the chin is directed to the pubis; when it is turned to the sacrum; and also when it is toward the one or other of the sacro-iliac articulations.

infinitely more complacency than does Dr. Burns. He says that of the facial presentations two forms occur the most frequently; viz., *first*, where the head during the labour presents the face with the forehead turned to the *left* ilium, and there forms (especially where the membranes have been ruptured before the os uteri was sufficiently dilated, or if the second stage of labour follow very slowly, &c.) a swelling first upon the upper part of the right half of the face, which in this species of face presentation is always situated the lower

If [he is clearly speaking of facial presentations]—if the further advancement of the third stage or the progress of the head through the external passages follow more quickly than usual, or if the labour at this period be artificially completed, the tumour of the face will appear upon the upper half of the right side, and the rest of it be free from swelling. But if the third stage advance slowly, and the head remain a long time in the cavity of the pelvis before it distinctly enters the vagina, the inferior half of the right side of the face, viz. part of the right cheek, will be remarked after birth as being the principal seat of the swelling.

As in cases of the first position of the 'vertex' where the head rests in the pelvic cavity (immediately before its entering the external passage), the superior and posterior part of the right parietal bone is that part which, corresponding to the pubic arch, is situated immediately behind the labia, and has the swelling of the integuments formed upon it; so in the case of the facial position above described, it is on the right cheek that the swelling takes place; and as in the former [first vertex] position it is the posterior fontanelle that corresponds to the left foramen ovale, and which moves gradually from right to left, passing under the arch of the pubis; so, in this facial case may the chin be felt behind the right foramen ovale, by degrees until it effects its passage under the pubal arch.

In the second of the two face-presentations which Professor Naegle represents as most common, the forehead corresponds to the right ilium, having a direction the reverse of that before described.

Now the Professor by no means regards such presentations

26. The presentation of the breech is perhaps more frequent than any other except the natural presentation. It is one not, perhaps, attended with material inconvenience to the mother, but the risk to the child is greatly increased, from the danger

of the face as a formidable evil. He says, "In twenty-two cases of labour with the face presenting, and which terminated successfully by the natural powers, and which he had an opportunity of minutely observing from beginning to end, the forehead was in fourteen directed to the left, and in the others [i. e. eight] to the right ilium.

In a midwifery practice of twenty years, he never (he says) had a case come before him, where in presentations of the face, as the labour advanced (if no mechanical assistance had been given by art, as for instance changing the direction of the head, bringing it down further, &c.) the forehead had turned itself forwards or upward, and brought the face, at the inferior aperture of the pelvis, into a direction contrary to the usual one. Many other experienced accoucheurs, he informs us, confirm his testimony in this respect.

In like manner, under these circumstances, he never observed the occiput, in cases where the feet or nates presented, to turn into the hollow of the sacrum, whether the anterior surface of the child had been *originally* directed forwards or backwards, or during the further advancement of the labour had taken that direction. He also remarked that under the most usual circumstances of the phenomena upon which the mechanism of child-birth depends, the labours where the face presented proceeded usually *without greater difficulty* than, and terminated quite as successfully as, those where the 'vertex' presented; and from his own experience he is of opinion that no unusual proportions [of the pelvis] are required for those cases.

Now this is perhaps putting the case in as strong a light as possible; but we must not conceal from the reader that, although Professor Naeglè inculcates the principle of facial presentations proceeding happily, if not interfered with, he decidedly intimates, as well as Dr. Burns, that there is much risk, of our producing injurious effects on the child if we frequently or roughly make vaginal examinations in those facial cases.

Now Professor Naeglè, as we have before hinted, is no friend to our promoting the passage of the foetus through the pelvis with the utmost possible facility. A degree of opposition to its rapid exit he considers to be desirable, rather than to be

which there exists of the umbilical cord being compressed before the change from fœtal life to respiration can take place.

We distinguish the breech presentation by the fleshy feel of the nates, by the tuberosities of the ischium, by the sulcus or sepa-

obviated by art. His feeling is, that nature in her economy contemplates such opposition for wise purposes. He pronounces *easy labours* to be "an exceedingly rare exception to the general rule." "After the incipient respiration of the new-born being, there is (he continues) no function which undergoes so great and extensive a change in its organic arrangement as that of parturition. And even if experience (which after all is of the most importance) did not so distinctly show that easy and rapid labours are *always dangerous*, and seldom without injurious consequences, analogy on the one side, and a nearer consideration of this great phenomenon of nature on the other, would lead to the conclusion that a certain duration of time, certain difficulties, an effort of strength, a struggle, &c., belong to the essential requisites of the safe, uninjurious, and, in short, healthy progress of this function."

We shall not follow the Professor through all the reasoning by which he endeavours to establish this principle, which to persons of a different turn of mind may appear to be too imaginative, and unsupported speculation. But in support of the doctrine that *some* opposition to the fœtal progression may be essentially requisite, we have only to remember that a *degree* of opposition creates, or stimulates uterine contraction, (though a formidable obstacle is found to suspend it). Hence, if the child passed with a very great facility through the genital canal, the placenta and secundines may remain undetached, and the substance of the uterus in a condition tending to hæmorrhage, and putting the life of the patient in the most imminent danger. This any common understanding can comprehend, without by any means finding it necessary with Professor Nacglè to speculate on the influence of slow or rapid labours on lactation, &c.

Those who would accompany the Professor through his ingenious observations, will find that he assigns different degrees of difficulty in parturition as appropriate to, and customary in various temperaments, constitutions, and grades of life. The stout, robust, and of a phlegmatic habit, he thinks, have a more protracted and difficult struggle to endure, than those who are thin and of an irritable habit. A first pregnancy occurring at an advanced period of life, or at a very early age, generally

ration between the thighs, by the organs of generation, and sometimes by the discharge of meconium. Before the membranes break, the breech presentation offers far less resistance to the touch than does the head, and has far more of mobility

occasions more difficult parturition, than at an age between twenty and thirty. A robust peasant woman will have a species of labour that would be unsuitable to a person delicately brought up, or to an irritable inhabitant of a populous town, and *vice versa*.

It consequently may require both consideration and considerable judgement in a practitioner to determine in a given case, whether he ought to afford or refrain from such artificial aid so as to contribute to the facility of parturition: putting out of the question altogether the practicability of diminishing existing difficulties in the process.

Now it is plain that this would open a field for physiological speculation far too complex for the present work: we cannot therefore pursue the subject.

In the course of Professor Naeglè's practice, he had arrived at a very different conclusion from that which Drs. Burns, Baudelocque and others had come too, regarding a certain turn which the head was said to make when it presented in the *third* position. The occiput in this case was supposed to turn itself into the hollow of the sacrum. Professor Naeglè, on the contrary, asserts that the anterior fontanelle in this case, if the head be on the point of entering the external passages, or a part of it already between the labia, continues still directed to the left foramen ovale, and the small fontanelle, which generally lies the deeper of the two, continues to the sacro-sciatic ligament. Immediately before it clears the os externum, the anterior fontanelle may be felt free from all swelling of the cranial integuments, at the inner edge of the left descending branch of the pubal arch, when the head is about to enter the external passage, it is chiefly the upper and the anterior part of the left parietal bone, together with a portion of the superior part of the left frontal bone, which are to be felt opposite to, or behind the upper part of the pubal arch, or which will come in contact with the finger, when introduced nearly in a perpendicular direction to the symphysis pubis. During its passage through the external opening, the anterior part of the left frontal bone presses with its flat surface against the deeply curved arch of the pubis, and I (says the Professor) have observed a red mark to have

in it. But when it descends into the pelvis, and is exposed to much pressure, it becomes tense, and may by the inexperienced be at first mistaken for either a head, or a face presentation. It will demand some vigilance in the practitioner with reference to the funis, as shall be described in the proper place.

been produced by the pressure on this spot ; I have perceived also (he adds), that the face when the head had cleared itself, turned towards the left thigh of the mother. If the head in this case stay a considerable time in the external passage before it passes the labia, it will experience for some time the pressure which the vagina so powerfully exerts upon it, and the exact position of the swelling of the integuments (with which the child is born) will be the upper and anterior quarter of the left parietal bone, which is that part of the head that continues the lowest during its whole passage through the pelvic cavity, as also through the vagina and external opening. It never happens, during the passage of the head through the pelvic outlet, that its lateral diameter moves in the lateral diameter of the inferior aperture, but always in an oblique direction. I have seen it so (says M. N.) (although not exclusively) in women pregnant for the first time.

An interesting point with regard to the prognosis of presentations is adverted to by Professor Naeglè ; namely, that women are usually conscious of the fœtal motion in utero at a side that may be regarded as indicative of the manner in which it will present ; inasmuch as the first position is the most frequent the sensation of the child at the right side is that which is in the majority of cases experienced. If, however, the motion should be felt at the left side of the uterus, whether habitually, or appear to change over to that side a little previous to labour, Professor Naeglè would be prepared to expect a presentation in the *third* position. Seldom has this [the *third*] position been observed when the child's motion was uniformly experienced at the right side up to the commencement of labour. The sensation suddenly passing *forwards* from the right side has also been thought somewhat prognostic of a change of position in the presentation.

So convinced is Professor Naeglè that the wrong station which Manuals on Midwifery have assigned to No. 3. position of the German school has operated as an *ignis fatuus* to the inexperienced obstetrician, and led him into the quagmire of '*Meddlesome midwifery,*' that he argues at much greater length,

27. Breech presentations are not now-a-days converted into footling cases, unless under some peculiar circumstances.

28. When the feet present, there is an absence of the "tumour of presentation" of which we have so repeatedly spoken. As the os uteri dilates, the membranes protrude in an elongated form; the presenting part is discovered to be small, by no means affording any thing like the resistance to the finger that the head does. When the membranes have given way, we perceive the heel, the ancle, and the toes, easily discriminating them from the hands and fingers. The feet will occasionally be found to cross each other, and the heels, the sole, the side of the foot, or the toes, may be first felt. Sometimes only one of the feet comes down, the other retaining its ordinary flexed po-

and with far more repetition than we can venture to do, to induce writers on the art to remove No. 3. to the 2nd place on the list of presentations, lest it should continue to be treated as an injurious irregularity, instead of being a very innocent variety of nature's salutary operations.

There is an *apparent* conflict of opinion between Professor Naeglè and Professor Burns: but we are disposed to imagine that those eminent contributors to the obstetric art have merely chosen different paths to arrive at the same station.

When, in our text, we spoke of the system and mode of 'rectifying' supposed *mal*-positions, we did so on the very influential authority of Dr. Burns, who has pledged his unquestionable veracity that he has himself accomplished the very changes he advises. Dr. Naeglè, on the other hand, has asserted, and that in such a manner as to put incredulity to flight, that he has, without the slightest evil consequences, permitted the so-called *mal*-positions to pursue their uninterrupted course to a felicitous termination. The only question we conceive to be one of degree; namely, whether Professor Burns may not have over-estimated the benefit of his '*rectifications*;' and whether Professor Naeglè may not have over-rated the advantage of the *passive* system. But we are not now going to sit in judgment upon our superiors, and recommend the able little treatise from which we have so largely and with so much gratification borrowed, to the attentive perusal of our professional readers.

sition. The great object of many obstetricians in this presentation, is to take care first, that the toes be turned to the sacro-iliac articulation of the mother, and, secondly, that both feet come down together. It is only in twin cases, however, where there is a possibility of the feet of different children being brought down at once, that any considerable precaution is demanded from the practitioner in footling presentations. When we come to explain the management more minutely, we shall dwell upon the marks of discrimination necessary to guard against so untoward a mistake.

29. The knees may present, or a foot together with the curved knee. Though the blunder has been made of mistaking a knee for a shoulder, for a breech, or even for a head, yet with a little attention no such error ought ever to be committed. In knee presentations, the bringing down of the feet is by some, but not by all practitioners, commonly preferred.

30. The presentation of the superior extremities is justly considered vastly more adverse than that of the inferior. A shoulder presentation has been mistaken for a breech; but the examination must have been a very slovenly one. The sharpness of the shoulder-joint, compared with the gluteal region, the shape of the flat scapula, and the contiguity of the ribs, all afford sufficient marks for discrimination. Where the arm protrudes into the vagina, the case is at once set at rest, and the palm of the hand, found in a state of supination, directs to the exact place where the feet lie. If we examine with the right hand, the thumb of the foetal right hand, or the little finger of the foetal left hand, will correspond with our thumb. There may be circumstances attendant on the presentation of the shoulder which would induce us to attempt rectifying the position by returning the shoulder and bringing down the head, in preference to turning. As for instance, when the uterus is by no means in a state of vigorous action, and still retains a consider-

able portion of the liquor amnii. But in general, indeed almost invariably, the practice is to turn so as to convert the shoulder presentation into a footling. It must, however, be the study of the practitioner to avail himself of every favourable circumstance, and this he shall best do by being precise in his examination, and cool and deliberate in his conduct. The celebrated Dr. William Hunter advised the shoulder to be pushed up, and the breech made to present; but we are not aware that this advice has ever been adopted.

31. It has been delivered down as a sort of axiom, that we are never to attempt rupturing the membranes, for any purpose (except in unavoidable hæmorrhage) whilst the os uteri is hard and undilatable. Writers on the art tell you that the os uteri must be soft and dilated to the size of half-a-crown, before you attempt to introduce the hand into the uterine cavity. If the membranes give way in such a state of things, we are not to wait for the evacuation of the waters, but immediately to introduce the hand into the uterus, and effect whatever purpose we design. Where the introduction becomes indispensable after the waters have run off, smearing the arm and *back* of the hand with either cold-cream, hog's-lard, or some mucilaginous fluid, such as a decoction of linseed, &c. may facilitate the process. But of difficulties in such matters we shall have to speak more particularly in a succeeding chapter. A shoulder and arm presentation certainly appears to be one of the most troublesome and embarrassing we can meet with: it cannot be left to natural efforts.

32. If we believe what some writers say, there is scarcely a part which in some anomalous case may not present: the hips, the belly, the side, may all, we are told, come in contact with our finger on an examination. The author has found a child lying across the womb, with the funis protruding into the vagina and pulsating. This case, with an inactive uterus, was, in his

estimation a clear case for turning; but he has known such a case to be left to nature, in the hope of a "spontaneous evolution" taking place! The result was precisely what the author predicted—the child was doubled up, and crushed to death; though the mother had the great good fortune to escape a rupture of the uterus.

33. The head and the arm have presented together. It will be well in such a case if we succeed in immediately returning the arm on the discovery of this awkward combination: but this is not always practicable. The general rule, liable to occasional exceptions, is to attempt to turn in all very adverse presentations, and convert the case thereby into a footling.

CHAPTER III.

THE NATURAL ORDER.

34. When the position, which we have described [§§ 21] as the natural and most favourable presentation, takes place without any untoward circumstance, and this will happen in a vast majority of cases, our mode of proceeding is exceedingly simple.* Our chief, indeed almost the only object of our solicitude, then is, to guard the perinæum from injury and laceration. A gradual procedure of the process of parturition is far preferable to rapid delivery, and should be our decided object. In a capacious pelvis, we are far more threatened with the precipitate expulsion of the child, and consequent laceration of the perinæum, than in a pelvis of more limited dimensions. We must, therefore, be assiduous, when the action of the uterus is going on vigorously, to guard against such a calamity, especially when

* It should be a general rule as the uterus propels, to follow down the propelled fœtus, &c., with the hand.

the pelvis is capacious. In such case we must not only cautiously support the perinæum, but also entreat our patient not either to exhaust her energies, or endanger her safety, by making voluntary exertions to "bear down." The practice of the female holding her breath, for the purpose of making those strenuous exertions, is greatly to be deprecated. A rupture in the lungs is said to have occurred from it, succeeded by emphysema; and it will, therefore, be the practitioner's duty to discountenance it as much as possible. The more the strength of the patient is economised, during the expulsion of the child through the vagina, the more hope we may entertain of the speedy and effectual contraction of the uterus for the expulsion of the placenta, &c., and the prevention of hæmorrhage. And these are objects far transcending the advantage of a speedy expulsion of the child. For, should those violent exertions cause a temporary exhaustion of the patient's strength, and only a very partial detachment of the placenta occur, we cannot say to what this may lead, the flooding having once commenced; for the hæmorrhage may progressively diminish, until it altogether prostrate, the power of the uterus. So strongly do such considerations weigh with the most judicious professors, that many are inclined to attribute the occurrence of hæmorrhage after delivery in most cases to rashness and precipitancy. Whether the female be exhausted or abundantly vigorous, the abstinence from voluntary or over-strenuous exertions should invariably be impressed on her; where any exception may be justifiable, as shall hereafter be spoken of, the licence must come from the practitioner when the emergency occurs. For, in the first case, she may sink into a state of depression in the third stage of the labour, and be exposed to the calamity of an inactive uterus, with retained placenta and hæmorrhage; and, in the second case, she may rupture the perinæum in spite of the most assiduous care on the part of her medical attendant. It must

always be borne in mind, that for uterine hæmorrhage there is no other effectual remedy than universal uterine contraction. All our efforts must be directed to accomplish this ; and the husbanding our patient's strength during the second stage of labour, or that which intervenes between the full dilatation of the os uteri and the expulsion of the child through the os externum, is the best of all ways to secure this efficient contraction in its proper time.

35. As no medical attendant can be justified in leaving his patient while suffering under uterine hæmorrhage, or with a retained placenta, it is evident that he gains neither credit nor liberation from his post, by such precipitate and ineffective delivery as we have above alluded to. Therefore, on every rational as well as conscientious principle, a calm and cautious mode of proceeding is to be preferred. This may not be an improper place to detail what relates to the general treatment of the patient under the various circumstances and states liable to occur in parturition with a natural presentation, reserving for after-consideration what we have to add with reference to presentations of another kind.

36. When the action of the uterus proceeds regularly, and perceptibly advances the progress of the child, even in a slight degree, there being no arrest or actual obstacle to the completion of the process, we are not justified in having recourse to artificial aid. It is only in cases of absolute necessity, and when it is evident that the unassisted powers of nature are unequal to the struggle without incurring a manifest risk to the life of either the mother or the child, that the practitioner is borne out in having recourse to the agency of instruments. But, as that able accoucheur, Dr. Denman, observes, "A time does certainly come when, if they be not delivered by art, in case of the inability of the powers of the constitution to effect the purpose, women would either immediately or consequently

inevitably perish." The same excellent authority adds,—“ It has been long established as a general rule in this country, that the use of instruments of any kind ought not to be allowed in the practice of midwifery from any motives of eligibility.— But when, from any cause, the parent becomes unequal to the expulsion of the child, the assistance of art, by whatever means it can be afforded, is justifiable by necessity ; because without such assistance the parent should die undelivered, and with her life that of the child's should inevitably be lost.” The powers and resources of nature, however, when judiciously managed by a well-informed accoucheur, and promoted by other means which science places at his disposal, will often, with a little patience, supercede the use of instruments. And it is the bounden duty of any writer who endeavours to influence the practice of this important branch of medical science, to lay down as clearly as he can the circumstances which render it justifiable—we should rather say, imperative—for the practitioner to employ an artificial mode of delivery.

37. A labour is said to be natural when the head presents in the favourable manner described in the last chapter, and the birth is accomplished by the efforts of nature within a reasonable time—say, twenty-four hours. Labour is by systematic writers divided into three stages. Dr. Mason Good, indeed, describes four stages : but we shall adhere to the more general method of division. The first stage commences with the accession of the genuine labour pains, and terminates with the full dilatation of the os uteri. The second stage begins with the complete dilatation of the os, synchronous with the first entrance of the presenting part into the vagina, and ends with the expulsion of the child through the os externum. And the third stage begins with the birth of the child, and concludes with the detachment and expulsion of the placenta and membranes.

38. The termination of the first stage is often characterised by a shuddering, rather than a shivering (for it is by no means uniformly accompanied by a sense of chilliness). This, therefore, occurring at or before the dilatation of the os uteri is by no means a necessary cause of uneasiness ; but when shivering fits come on after the os uteri has fully expanded, it is far from being a satisfactory sign, and denotes some morbid or febrile impression on the nervous system. It has been deemed by some practitioners as indicative of a tendency to puerperal fever: it at all events should awaken the vigilance of the medical attendant.

39. Rigors, however, may occur in the commencement of labour without exciting our alarm, and at that time there may be so decided a sense of chilliness as at times to demand an increase of bed-covering, and likewise some warm gruel, sago, or other mild refreshment. Such accessions in the first stage are not to surprise us, when we consider that the puerperal state is really a febrile state, and that the entire nervous system decidedly sympathises with the uterus. We must, however, strictly guard against being betrayed by those occasional rigors into the exhibition of irritating stimulants ; for thereby we may do incalculable injury. It has been well observed by Doctor Andrew Blake, in his little book of *Aphorisms*, that—"It is to the prevalent and destructive custom of giving diffusible stimulants in progressive and natural labours that the subsequent symptoms of inflammation and fever are mainly attributable ; at least few women can be delivered under the influence of wine or spirits without experiencing a fearful hæmorrhage."

40. The same author deprecates the administration of opium "in inconsiderate doses," and also manual assistance for the purpose of hurrying the dilatation of the os uteri ; as well as the premature evacuation of the waters : all done for the purpose of getting over the process of parturition in the shortest possible

period, with little regard to ulterior consequences. But the criminality of such conduct must be evident to every reflecting physician. In fact, the general order of labour ought to be interfered with or disturbed as little as possible.

41. From the time the head has passed the os uteri, and entered in a favourable manner into the pelvis, and when the pelvis itself is free from deformity or any obstructing cause, the practitioner's almost exclusive attention, as before intimated, will be paid to watching and protecting the perinæum, as soon as that becomes greatly distended by the pressure of the head. Should the bladder require to be emptied by means of the catheter, it will of course be the practitioner's duty to attend to the patient's necessities in this respect; but this necessity, generally speaking, does not frequently occur in the progress of labour, at least most females are delicate of requiring such aid.

42. In supporting the perinæum, we are to be assiduous, whether it be of the ordinary proportions, or, as sometimes happens, considerably shorter than usual. The entire of this integument must be evenly supported; for it is commonly by undue pressure against a part of it, rather than by the general distension of the entire surface, that the deplorable accident happens. When the perinæum distends with facility, and throughout all its surface, feeling relaxed, and secreting freely from its internal membrane, we have not much to apprehend; but when certain portions of it are more rigid than others, we cannot be too vigilant and systematic in guarding it, and promoting its general flexibility. It is the ordinary practice to keep a soft napkin between the extended palm of the hand and the perinæum, but some very punctilious practitioners object to this, and say that we can give much greater security by the support of the bare hand. The napkin, however, contributes to cleanliness, as well as to the comfort of the female. Now, though

we consider the uncompromising objection to the napkin to be hyper-critical, it is certain that when the child's head is passing through the os externum we shall find it prudent to dispense with the napkin, the palm of the hand, with a dextrous employment of the finger and thumb, being the best for gently sliding the perinæum over the foetal cranium, at the same time that we are bringing forward the posterior portion of the integument: thus affording the greatest possible surface for uniform distention. We are by no means to discontinue our vigilance when the head has passed through the os externum, but must prolong our support till the shoulders, and even the breech, shall have been born, using the left hand for this purpose, and giving a favourable direction to the body of the child with our right hand. The arm of the foetus occasionally requires to be watched as it approaches the os externum, lest it should be propelled with force, and in an awkward position, so as to come with a jerk, and lacerate the perinæum. But when the practitioner is steadily on his guard, such an accident will rarely happen; though almost in spite of every precaution, especially with a restless and uncontrollable patient, laceration of the perinæum may take place. The most usual cause of the accident is the female suddenly darting beyond reach of the practitioner's hand; and as allowing her to take hold of a towel attached to the head of the bed is considered to contribute facility to her in thus changing her position, the indulgence has been objected to on this account. But when the restlessness and impetuosity of the patient give reason to apprehend such an occurrence, she ought to be cautioned as to the danger, and the deplorable consequences of a lacerated perinæum be pointed out to her. Seldom will such a precaution fail to have the desired effect. In proportion as we find the resistance at the os externum persistent, and sometimes, especially at first births, it is astonishingly so, we must retard the head by steady and general pressure on

the perinæum, at the same time that we implore our patient to abstain from all voluntary exertions, and above all beseech her not to retain her breath. It is always better when the female cries out, as we are then certain she cannot add the pressure of the diaphragm to stimulate the abdominal muscles. Severe lesions of the lungs have happened from violent retention of the breath in parturition, and we should not hesitate to caution our patient of those dreadful consequences of impetuosity when we find her unamenable to milder advice.

43. It should be remembered that while we are thus in a degree retarding the exit of the child, and we must continue to do so until we find the os externum and perinæum yielding in a favourable manner, we are by no means rendering fruitless the uterine action. On the contrary, the contraction of the uterus has much to effect besides the mere expulsion of the child. It is to its perfect contraction we must look for the detachment and expulsion of the placenta, &c., and for the diminution of the calibre of the uterine vessels, which is our only security against flooding. It is with this view that we should steadily caution our patient against exhausting her energies by inordinate efforts, either in the first or second stage of labour, as the abdominal muscles, not the uterine fibres, appear to be those which are directly under the control of the will.

44. When the head is about to be delivered, we must take care that none of the membranes be permitted to remain on the child's mouth, so as obstruct the process of respiration. If the umbelical cord be round his neck in such a manner as to interrupt the circulation through the funis, we must slide it over his head; for in protracted deliveries the foetal mode of life, by protracting the placental circulation, is sometimes maintained with the most important advantage, until the new condition of the lungs be completely established. In weakly children, who manifestly gasp for breath, and faintly sigh, the umbelical cord

should not be tied, nor its circulation be suffered to be obstructed, *until it ceases to pulsate*. I have known the lives of children to be lost by overlooking this precaution. When it happens that the child cries lustily on being born, we of course are freed from all solicitude on his behalf, and may then proceed to tie and divide the funis as soon as we find convenient. When he does not cry, and evinces any degree of torpor, it is very much the custom to slap him repeatedly on the back, in order to accelerate the action of the respiratory muscles. But a more seemly, and still more effectual proceeding, is to sprinkle a little cold water on his face and breast. Nothing brings on contraction of the muscular system more promptly and efficaciously than this does. Should there be suspended animation, we must without delay proceed to take such steps as may be required. Inflating the lungs, either by means of a tube passed a little way into the glottis; the tongue being drawn gently forward for the purpose, or even through one of the nostrils, while the other is closed, will usually be our first experiment. Which ever of the two methods we pursue, we must impel the air into the lungs with the greatest gentleness, and alternately press our hand on the thorax or epigastrium to produce artificial expiration, and bring on action in the lungs. Violence or force in the inflating process may cause a fatal lesion of the lungs, and of course must not be hazarded: patience and gentleness being indispensable. Should our endeavours to promote respiration prove ineffectual, and the pulsation have entirely ceased in the umbilical cord, we in such cases tie and divide the funis, for the purpose of removing the child from the bed and trying other measures, as more fully explained in an after part of this work. Sometimes advantage has been thought to accrue on the division of the cord, by putting only a loose ligature round it, and even permitting a small quantity of blood to escape from it, on the supposition that an engorgement or stagnation of blood,

or something analogous to apoplexy might be present. It is also recommended to remove the child near to the fire, or, what is still more promising, to place his body in a warm bath, carefully continuing our efforts to produce artificial respiration. Dr. Burns advises us to administer an injection; and he also recommends the trial of electricity; but the latter we cannot always command on such occasions. Where the breathing is unequivocally in operation, but symptoms of stupor and cerebral congestion present themselves, we shall be justified in suffering a little more blood to escape from the cord than otherwise. But in all cases the loss of blood to a new-born infant must be admitted with great circumspection, for they bear it badly. Where the child breathes, but is feeble, the administration of some mild cordial, such as a spoonful or two of wine-*wh*ey, may be judicious.

45. There used formerly to be a superstitious or silly custom of placing the placenta on still-born children, as the means of re-animation; but on this absurdity it will not now be necessary to offer any remark.

46. The manner of tying and dividing the umbelical cord is simple, yet it is necessary that we should briefly describe it. The best ligature we can apply is a short piece of narrow flat tape. We shall require two such pieces, according to established custom, the first to be applied with sufficient force to stop the circulation in the cord, from an inch-and-a-half to three inches distant from the child's navel. It matters not which distance you adopt, though practitioners, but especially nurses, are occasionally found to differ on this point. The author has always found the distance of an inch-and-a-half from the umbelicus to answer every useful purpose, without leaving too bulky an appendage. The second ligature is to be placed on the maternal portion of the cord—i. e. the part contiguous to the mother—at the distance of an inch or an inch-and-a-half from the first liga-

ture, or at such adistance as will admit of a convenient division being made with a scissors between them. The use of the second ligature is to prevent the bed being stained by the discharge of blood from the maternal portion of the funis. Those persons, who insist, and perhaps very properly, that no ligature ought to be placed on the funis till the circulation has quite ceased therein, consider the second ligature as unnecessary. But as it is not attended with any great trouble, does no harm, and is viewed by nurses as an indispensable part of puerperal arrangements, the practitioner may as well conform to the fashion. When the division is completed, the end of the portion attached to the umbilicus should be gently wiped, by applying a soft cloth to it, to remove any adherent blood; the child is then received by the nurse whose province it usually is to wash and dress it. It is a common custom to scorch a small piece of linen rag, and to envelope the fragment of the umbilical cord in this rag, as a sort of dressing.

47. As soon as the offspring has been placed in a state of security from fatal result, we again turn our prompt and undivided attention to the mother. The first thing to be done is to apply our hand or hands to the abdominal integuments of the uterine region, both to ascertain that the fundus uteri is in its proper place, and efficiently contracting, and to promote that contraction. We believe that the favourite method with the great majority of obstetric practitioners is to grasp the region of the fundus with the hand: if this be duly contracting, we shall then feel it like a hard ball gathering beneath our grasp, and we are, in conformity with the practical directions of Dr. Collins, as it were to hunt this descending and contracting ball of the fundus uteri down into the pelvis, which is its proper station in the unimpregnated state; and when we have got it there, the object is to retain it by means of the compress and binder in that position, so as to present an obstacle to the fun-

dus again mounting into the abdominal region and the uterus expanding. We have always experienced much utility from dipping the hand into a bason of cold water before we thus grasp the fundus uteri. This greatly promotes the uterine contraction, and if promptly had recourse to, may obviate the necessity of more troublesome expedients. For this purpose we make it a point to have a wash-hand bason of cold water close to the bed at the moment of the birth. When uterine contraction does not proceed to the practitioner's satisfaction, he may find it necessary to sprinkle the abdominal parietes of the uterine region with cold water, slap them with a towel wetted therewith, or pour cold water from some height upon them. Various other expedients are recommended for stimulating the uterus into contraction, one of these is the application of smart and continued friction over the region. We are told to apply the palm of the hand flatly over the region, and to make the abdominal parietes perform a sort of friction on the uterus, without our hand changing its position with reference to the portion of the integuments on which we placed it. Thus, we are told, we shall more effectually stimulate the uterus than by any other mode of applying friction. Dr. Burns, who is an advocate for this plan, says—"By pressing firmly on the uterus with the expanded hand, and moving the abdominal parietes over it, we may excite the uterine action." Our esteemed and scientific friend, Dr. E. G. Leeson, has a peculiar method of applying his hand to the region of the fundus uteri after the birth of the child. He does not grasp the uterus, but presses backwards with the *edge* of his extended hand above the fundus, and in this manner follows the contracting globe of that organ down into the pelvis, applying the pressure backwards and downwards. The various other means of promoting contraction are to be elsewhere noticed; here we have said sufficient for normal occasions.

49. Some persons place the abdominal bandage, with or without a compress, over the uterine region immediately on the child being born; while others delay its application until the placenta has been expelled into the vagina. Perhaps the latter is the better method, as we can substitute the pressure of the hand for that of the belt and compress, and more effectually add friction, cold water, wet cloths, &c., before than after the adjustment of the binder.

49. In the above remarks we have supposed the natural course of labour to proceed favourably, as, through the bounty of Providence, it most commonly does. But many unpropitious circumstances may occur even with a natural presentation, and it will be our duty not to pass them over without particular notice. Many of the foregoing observations, however, will be equally applicable to other presentations as to the natural one; reserving the opportunity, as we shall do, of afterwards adding whatever more may be necessary, and under suitable heads.

OVER-DISTENTION OF THE UTERUS.

50. We occasionally meet with this as a cause of tedious labour, affecting the first stage. The over-distention to which we now advert is occasioned by an immoderate secretion of the liquor amnii, and is sometimes accompanied by a preternaturally strong texture of the membranes, so that they are unusually long in giving way. There can be no doubt that in such a state it may be the duty of the medical attendant to interfere, and, by rupturing the membranes and discharging the waters, to bring about effectual contraction of the uterus. For while this preternatural distention continues, it is not to be expected that the organ can so press upon its solid contents as to cause their expulsion. But nothing is to be rashly or precipitately done, nor until we find the os uteri in a state approximating to dila-

tation. As the dilatation advances, in such a tough and unyielding condition of the membranes, it is usual to find them protruding into the vagina in the shape of a bladder, and therefore preventing the finger from approaching the foetal head. But we should bear in recollection that the first stage of labour is not always one of great rapidity, even where no obstacle intervenes calling for our interference with the natural process. It is perhaps generally somewhat tedious, the pains being often short and frequent, and not unusually very severe and cutting. The regular order of those pains is to begin in the back, and to extend from thence toward the pubis or the tops of the thighs. They descend, very often gradually, to the forepart of the thighs, and thence to the back-part thereof, the fore-part getting some relief as the back-part becomes affected. Not unfrequently there is a dull aching or else acute pain in the upper part of the sacrum, with a great tendency of the female to sickness and languor. Therefore, in this stage it is far from uncommon to have the patient depressed in mind, and rendered uneasy by what she conceives to be a deficiency of the pains, and their wanting what is termed the "bearing-down" character. We are not, then, to confound the actual state of over-distention, where our interference is justifiable, with an ordinary, or not unnatural state, where it would be pernicious. For there is nothing which contributes more to amelioration of the process of parturition than that the membranes should remain interposed between the foetal head and the maternal parts until the head is about to pass through the os externum. It makes a vast difference to the patient whether she be exposed to the hard unyielding cranium, or have the interposition of a soft medium. Consequently, we are not inconsiderately to do what in reality would turn out to be an act of cruelty to the mother, on account of a little natural and temporary impatience, but must endeavour to soothe and allay that impatience and

66 SHRINKING OF THE UTERUS BEFORE LABOUR.

accomplish whatever is in our power to contribute to the ease and refreshment of the patient in this stage. Yet when we find her becoming exhausted, and greatly depressed in mind by a long continuance of fruitless exertions ; when, *with a dilatation of the os uteri*, we perceive every mark of over-distention ; we are not to permit the patient's strength to be worn down and rendered unequal to enduring the effects of the subsequent stages, but must proceed to bring on effective pains by the evacuation of the waters.

51. It will assist our discrimination in this matter to remember that it is usual, as labour approaches, for the uterus to become more tense, and apparently reduced in its bulk compared to what it was before. The female often becomes very sensible of this change. She thinks that the uterus has really become smaller, and she feels some increase of activity, though she seems as if she carried the child lower than formerly. But in the case of over-distention, such a change is not to be expected.

52. In the first stage of labour, we ought to be prepared to expect the occurrence of many annoying symptoms, which are nevertheless not to excite alarm. While the os uteri is dilating as we before intimated, tremors, sometimes so violent as to shake the bed, are often experienced. At other times, there is a distressing sense of tenesmus, from an intimate sympathy that exists between the sphincter ani and the os uteri. There also may be witnessed great desire to pass urine, with an incapacity to evacuate it. We here repeat points before adverted to, for the purpose of enforcing it on the practitioner's mind, that, before he proceed to interfere by piercing the membranes, he should do his utmost to remove such symptoms, as those here described, by the catheter and such other means as we have previously mentioned. At times there is an urgent griping, which may call for the administration of enemata. The stomach may be greatly disturbed, and severe vomiting prevail. When this

is not extreme, it need not be interfered with, as it is peculiarly indicative of dilatation of the os uteri, and increases the action of the abdominal muscles. But when it is urgent, it may be proper to allay it. Very small effervescent draughts, with a few drops of tincture of opium, or of hyoseyamus, as elsewhere stated, contribute to quiet stomachic disturbance, and so does a bella-donna plaster applied to the epigastrium. When there is an unpleasant taste in the mouth, cool but strong toast-water is sedative to the stomach. Rubbing the epigastrium with opiated oil, also helps to tranquillize that region. Such little attentions will serve to tranquillize, and keep the patient from dwelling too despondingly on her condition. A sense of sinking and fainting is apt to be experienced about this period, but, while the pulse continues in its vigorous puerperal state, we are not to view this with any apprehension, nor to fly to exciting stimulants for its removal. There is no harm, however, in giving a few drops of the compound spirit of lavender in such a case, on a bit of sugar. It is not often that females evince much desire for substantial refreshments in the first stage, and it is well they do not, for it is the reverse of proper to overload the stomach at such a period. But there can be no general objection to give them, when they express a wish for it, an occasional cup of gruel, panado, sago, whey, lemonade, or any light and suitable refreshment, including tea and dry toast; and this will be the more proper in proportion to the tediousness of the first stage. When females repose occasionally, between the pains, it is a good sign and greatly recruits their strength.

53. As we have stated that the febrile diathesis is always attendant, more or less, on parturition, and, indeed, on the entire progress of utero-gestation, it will demand the attention of the practitioner only when urgent and in an immoderate degree. Therefore, when restlessness, heat, thirst, rapidity of pulse, flushing of the cheeks, and general excitement manifestly become too great, more especially when there is any wandering

and delirium, venesection may be requisite. Such a state as we have just described, accompanied by a persistent rigidity of the external parts, point out the propriety of a moderate deduction of blood, or of the mixture mentioned [19], or, perhaps of both combined. United with venesection, in such cases, we may find advantage in having recourse to emollient enemata, sometimes to purgative medicine; always to due ventilation, cool air, refrigerent drinks, or small effervescent draughts, with tranquillity of the chamber. It has been also considered, that the mere evidence of a plethoric state with much vigour in the patient will authorize venesection on the prophylactic principle. This has been recommended with a precautionary view, lest, from a redundancy of vascular action, the patient may rupture some pectoral blood-vessels during her excitement. Of course, when a very manifest redundancy of energy and of the sanguine temperament prevails, the prudent practitioner will not hesitate to remove a source of hazard by such means. But it is altogether a case for the exercise of his judgment, and to which no general rule can invariably apply.

54. An advanced period of life, in a first confinement, is said to render parturition more difficult. I have seen this the case; but I have also seen it otherwise. Several precautionary measures have been pointed out as applicable to such circumstances: we have been advised to prescribe frequent and small bleedings towards the close of pregnancy, with a view of promoting relaxation; to direct the patient to take emollient and laxative medicines; and sit over the steam of warm water every night at bed-time; and to anoint the external parts with some unctuous substance. These may have some beneficial effect; but Dr. Denman thought that they were likely to do more injury by exciting a timid state of mind in the patient, than to promote any physical benefit. Dr. Waller, Dr. Denman's editor, however, is an advocate for the small bleedings in such a case, and also recommends long-continued fomentations as calculated to

produce a very relaxing effect, and to increase secretion from the vagina, thereby giving the parts a disposition to dilate.*

55. It is far more probable that the practitioner will find his patient to have experienced a premature rupture of the membranes before his arrival, an evacuation of the waters, and the commencement of the second stage of labour, with very acute pains, and rigid contraction of the uterus, than that he shall be called upon himself to pierce the membranes. Should he, however, be in attendance during the first stage, he is not, as we for the second time observe, to be too frequent in his manual examinations during that stage, for, in many constitutions, he may thereby light up a flame of extreme nervous irritability, and even bring on a state of the parts approaching to inflammatory or congestive. His examinations, therefore, are to be few, slowly conducted, and particularly gentle. We cannot too often inculcate this maxim, so apt to be violated by the impatience of young practitioners. It is really a point of the most decided importance. It is a duty, indeed, to make an exact examination, for thereby we obtain information whether our aid be required to obviate the consequences of mal-position. But an exact examination is seldom compatible with abruptness, and the sudden introduction and withdrawing of the finger seldom serves any other purpose than that of irritating the patient. The slow and gentle introduction and retreat of the finger will, however, seldom awaken uneasiness, or do injury, unless it be too frequently repeated. But one good examination per vaginam ought, when the os uteri has become dilated or nearly so, to give us all the information required; and before that period we can learn but little that can be practically useful to us.

* The occasional use of the warm bath towards the termination of utero-gestation, or even after the commencement of the first stage, has been found very beneficial in obviating tedious labour.

70 DELAY AFTER RUPTURE OF THE MEMBRANES.

During the second stage, frequent examinations are more justifiable, and the practitioner will often at this period, find his patient solicitous that he should ascertain, and report to her, the progress that the labour is now making. In a future part of the work, we shall speak of the use of the stethoscope in obstetrical practice, and it will suffice here to remark, that an application of that instrument to the uterine region may advantageously precede an examination per vaginam. It often prepares us for the sort of presentation we are to expect. And it is our best, if not our only trustworthy evidence as to the vitality of the fœtus. We shall not anticipate what we have elsewhere said on the subject, more than to remark, that when we hear the action of the fœtal heart high up, or close to the umbilicus, it affords a presumption that we shall find a breech or footling presentation.

56. But though the rupture of the membranes be likely to be followed quickly by a severe increase of pain, and active labour, this is not invariably the case. Several hours, or even *days*, have been known to succeed this event without efficient labour commencing. This is very unusual, it is true, but we must not be altogether unprepared for such a contingency. It will in a great measure depend upon the female having maintained the recumbent posture and a perfect state of quietude after the rupture of the membranes. Besides, though the membranes usually lie in close contact with each other, still there occasionally is an interval containing fluid between the innermost (the amnion), and the outermost (the chorion), and the latter may be ruptured and discharge its contents, while the former remains intact. These, however, are occurrences we do not frequently meet with. When such a quiescent state of the uterus follows an evacuation of the waters, it may be connected with an unirritable condition of the entire system; nevertheless it will seldom require artificial interposition.

57. But want of sufficient irritability in the constitution has been noticed by Dr. Denman under a special head, as well as a certain tendency in labour to occasional insensibility or a sort of paralytic state, rather than the ordinary acute feeling and excitation. Sometimes this is remarkable in fat, inactive women; at other times it would appear to be attributable to extreme timidity and overpowering depression of mind. In all such cases, slow labour is to be anticipated. Much time, therefore, and perhaps in extreme cases, artificial assistance may be necessary before the process can be completed. Dr. Denman says —“ I have often suspected that the foundation of this imperfect action, or total inaction in the advanced state of labour, may have been laid by some error or accident in the beginning, perhaps by exciting the action prematurely, which will of course cease when the artificial cause is removed; but sometimes these imperfections have evidently been occasioned by some specific affection or action of the constitution.” In such cases, every variety of treatment may be appropriate, from mild cordials, with soothing encouragement, up to the employment of decided stimulants, including the ergot of rye, of which we have treated in the Appendix [8]. Some of the French Accoucheurs are in the habit of administering alternate spoonfuls of wine and Beef tea, as stimulants in puerperal cases of debility.

58. Rigidity of the membranes, even without preternatural distention of the uterus, has been enumerated among the causes of tedious parturition. That it is very rarely so to be regarded, and that it almost never, *per se*, calls for our interference to rupture the membranes, few who have had much experience in Midwifery practice will doubt. Dr. Denman has with great propriety impressed it upon the minds of obstetricians, that “neither mother nor child is ever in any danger (except in cases of hæmorrhage and convulsions) on account of labour, before the membranes are broken.” But if there should be

a really justifiable cause for rupturing them artificially, there can be no difficulty in accomplishing it on the perfect dilatation of the os uteri. A caution, however, has been given by Dr. Denman, which, as it is not impossible for the mistake to be made, we shall here repeat, namely, that when the os uteri is wholly distended and smoothly spread over the head of the child before the dilatation of the os, it may be mistaken for the membranes. No one on a careful examination should be guilty of so serious a blunder, and, therefore, the mere caution may be sufficient to obviate it. Dr. Mason Good advises us, when we have occasion to pierce the membranes, to do so with a metallic catheter, which we are to introduce between the wall of the uterus and the membranes, at some distance up from the os uteri, before we make the perforation. By employing a tubular instead of a solid instrument, the passage of fluid through the tube will acquaint us when we have executed our purpose. The object of making the perforation somewhat above, instead of immediately at, the os uteri, is that we should thereby admit of a gradual rather than a sudden evacuation of the waters, and have a greater facility of turning, should that process become necessary, than if we had to proceed to the operation in an uterus quite evacuated of the liquor amnii. It may also be added that by this method we run by no means so much risk of injuring the child, as we should by thrusting up an instrument directly from the os uteri in a perpendicular direction.

59. When the membranes have broken before the dilatation of the os uteri, as we have before remarked, a very trifling evacuation of the waters may take place, in consequence of the head immediately stopping up the uterine orifice before the liquor amnii had time to escape. The consequence would be a dribbling, or trifling discharge of fluid, whenever there was a pain, and the action of the uterus would hereby be fettered nearly as much as if no rupture of the membranes had taken place. Now

this, being a head presentation, is a case in which we have no occasion for turning or delay. The remedy for such a condition is sufficiently simple. To evacuate the waters, we have only to introduce the right hand and with the fingers and thumb to raise the head in the pelvis, or carefully to give it a trifling inclination towards the sacrum, so that there shall be room for the waters to run off. But we must take care in doing so that we do not turn the head round, so as to give it an unfavourable position; on the contrary, we should satisfy ourselves, by tracing the fontanelle and the sutures, whether we might not improve the position, and, if so, we ought to avail ourselves of such an opportunity of effecting that desirable object.

60. A far more important obstacle to parturition than either of those mentioned in the foregoing part of this chapter, is where there is a shortness of the umbelical cord. This may happen either from a natural shortness of the funis, or, which is of far more frequent occurrence, when it is so wound round the neck, body, or limbs of the child, as not to reach to the os externum. When this happens, the child may repeatedly be retracted, and its life endangered. We are led to suspect the shortness of the funis when the fœtal head is frequently drawn up on the cessation of pains. The circumvolution of the cord round the child's neck is what every practitioner in Midwifery must frequently have witnessed. It has been advised that, when we find a case of this kind unmanageable while the patient continues in bed in the ordinary position, we should direct her to leave the bed and assume the erect posture, or to kneel before the bed, leaning upon the edge of it, or else to rest in the lap of one of her female attendants, as was a very ancient custom in parturition. This method has sometimes overcome the difficulty, and, where the obstacle was occasioned by the circumvolution of the funis, has enabled the practitioner to slide it over the head. When the head has been born, of course this

will be immediately done, if the funis prevent the body from being expelled. But, should the impediment continue, either from the preternatural shortness of the funis, or its very great and intricate entanglement, and the body of the child remain in the vagina, his mouth must be opened in the first place, to promote respiration, and we must next proceed to tie and divide the funis. This latter, however, we should not be in too great a hurry to do, so long as the life of the child is not endangered, and decided pulsation continues in the cord. But when it has remained so long that further delay becomes injudicious, we should regularly attach a ligature, and complete the division. With a manly candour that does him infinite honour, Dr. Denman acknowledges that the life of a child was once forfeited by his having divided the funis *in vagina* without tying it.

61. In still-born children, where putrefaction has taken place *in utero*, the body sometimes is so greatly swollen as to present vast difficulty to the birth. In cases of this description, we may be obliged to tie a napkin or handkerchief round the child's neck, for the purpose of extracting it, and even to employ much dexterity in bringing down the arms, and manœuvring so as to extricate the body. But our success in this will be the more certain if we make the extractive aid co-operate with the uterine contractions.

62. As we shall give special consideration to those circumstances which interpose the most formidable obstacles to parturition, and propose to describe minutely the sort of extraordinary interference they demand, whether by instrumental or other aid, we, therefore, shall conclude the present chapter by briefly enumerating a few other causes of tedious labour.

63. We have already adverted to rigidity of the os uteri or of the external parts, or both, as an untoward occurrence. Dr. Denman, as well as Dr. Collins, is very adverse to our em-

ploying manual force to dilate the os uteri. He thinks that such attempts increase rather than diminish the evils of its rigidity, by inducing an inflammatory state of that highly irritable part. In first labours, the slow dilatation of the os uteri is not to be viewed with so much impatience as in subsequent confinements; and it is commonly supposed that the more children a woman has had, the more readily will the parts acquire relaxation. Various methods of promoting relaxation have been proposed, exclusive of that most objectionable one, the recourse to manual separation of the labia. Emetics have been given for the purpose, and we have an account in a periodical work of the vomiting of sea-sickness having caused rapid dilatation. In addition to what we have before said on the sympathy of the os uteri with other organs, we may remark here, that we are not to be too bountiful of such means. When the rigidity is accompanied with considerable heat and tenderness in the part, venesection and the mixture of tartar emetic and opium, mentioned [19], will be our only effectual remedy; and this will also tend to the suspension of uterine action until the proper occasion for its renewal shall have come on. We may sometimes advantageously conjoin with the above means the administration of anodyne enemata, together with the application to the navel of lint steeped in tincture of opium. These have some power in introducing temporary quiescence of the uterus, while they have not so great an influence in stupifying the general system as large internal doses of the powerful soporific drug. We have before spoken of the injection of mucilaginous injections into the vagina in case of rigidity of the parts and their being deficient in their natural secretion. On this we have no great reliance, but it may prove somewhat soothing and comfortable, and is far less objectionable than the application of oil to the parts. Under the head of the Cæsarean operation, we shall allude to the practice of dividing an incurably rigid os uteri, in

those extreme cases where it has become of a morbidly altered texture.

64. In the case of an oblique position of the os uteri, previously mentioned, we have advised the patient to be placed on the side to which the os uteri inclines. By this method we may reasonably hope that the weight of the fundus, being thus made to incline to the same side as the os does, will act as a counterpoise, and gradually rectify the obliquity of the latter. But to attempt this rectification by the hand is to be guilty of a piece of antiquated barbarity. This remark, however, is not meant to apply to Dr. Burns' advice with regard to the *gentle* attempt to promote the sliding of the labium over the presenting cranium, for the latter has some analogy to what we accomplish at the perinæum, and pre-supposes due abstinence from roughness. It, besides, has been recommended in cases of hypertrophy of the labia uteri. If we make this attempt, however, it may be well to moisten or lubricate the finger with some such mucilaginous liquid as the decoction of linseed.

UTERINE SPASM.

65. We are sometimes exposed to an unfavourable, or spasmodic, contraction of the uterine fibres, the organ becoming partial in its action, and therefore contributing little or nothing to the advancement of, or perhaps actually impeding the process of parturition. Of this we have indirectly treated before, but a few more practical observations concerning it will here be necessary. This irregular contraction is evidently a morbid phenomenon. It is accompanied by violent cramps, and pains in various parts of the abdomen, which tolerably well stamp its character as spasmodic. At times every part of the uterus contracts with the exception of its fundus; and without the due contraction of the fundus there can be no genuine expulsive

force. The uterus may by irregular contraction be thrown into various forms, at times the longitudinal, at others the central, called the "hour-glass contraction." Occasionally a circular contraction of the cervix is found, lifting up the foetus, and giving the mother a sensation as if it approached her stomach. It is not very encouraging when such a state exists, for we are led by it to apprehend a tendency to spasmodic contraction after the birth of the child, by which the placenta may be retained, and our agency required for its disengagement, as in the proper place shall be discussed. The question here is, how are we at an early period to act under an attack of those irregular uterine contractions? We believe that the means we have recommended for rigidity would be far from unsuitable in this case; but as those contractions are manifestly of a spasmodic character, and may, perhaps, yield without blood-letting, we shall extend our view somewhat beyond this method. Are we not to allay this painful and unprofitable action as promptly as possible, and quiet the system, with the hope that, after the intermission of pain and nervous irritability, more regular action may succeed to the temporary quiescence? This probably is the best principle we can act upon. With this view, we may apply the lint steeped in laudanum to the umbilicus; we may have recourse repeatedly to sedative enemata, we may rub the entire abdomen with some sedative liniment, such as warm oil impregnated with opium, or that and camphor,—or possibly the addition of a little Belladonna to these may render the liniment still more anti-spasmodic. An internal opiate may be advisable when the system is excessively disturbed, but the opiated antimonial mixture we regard as more generally useful than mere opium. Cooling medicines and even venesection, will be called for when febrile symptoms manifest themselves, and it will always be well to secure the moderate action of the bowels. Dr. Denman advises, in those sharp and

ineffectual pains, that besides giving the patient the refreshment of cool air, we should recommend her to assume the erect position, and even encourage her to take as much walking-exercise as she can well bear. But when we do so we cannot, with consistency, administer strong opiates with the intention of producing tranquillity and sleep. And, indeed, though Dr. Denman does countenance the exhibition of a draught containing 20 drops of tincture of opium, under such circumstances, he says —“In general I have great objection to opiates on slight occasions to women in labour, they frequently produce very untoward symptoms, and make that which was in itself natural become difficult or dangerous to the mother or child, as evidently as any other kind of unseasonable interposition.” In all such cases, there will be an indispensable demand for our patience.

MORAL TREATMENT.*

66. In no case have the passions of the mind a more powerful influence on the bodily functions than in the puerperal state. When women become alarmed, or excessively timid, it acts as a cause of decidedly diminishing, if not of altogether suspending the uterine action, and, as it were paralyses the parts; while, when the mind becomes exhilarated with hope, every thing again seems to go on favourably. This inculcates a very useful lesson to those who are near females during or previous to the period of parturition. It shows that they are vigilantly to avoid any conversation calculated to awaken terror, and despondency, or any expression whatever of apprehension. They must, on the contrary, endeavour to cheer the mind of the patient. This is the particular duty of the medical atten-

* Moral treatment we consider inseparable from every arrangement in the obstetric art and every line of practice pursued.

dant, who, both by his words and deportment, must invariably strive to promote confidence, and to dispel gloom. And he must forbid whispering in the apartment, or any appearance of anxiety among the females admitted into it,—and the fewer they are the better.

67. The last topic we shall touch upon in this chapter is a deformed state of the pelvis, with or without an enlargement of the fœtal head from disease. These may become the most formidable obstacles imaginable to parturition : they may even render inevitable the employment of means to diminish the bulk of the child's head ; or they may, in slight cases, be overcome by time, whether with the aid of extracting instruments, turning the child, or merely by patience and the efforts of nature. For it is almost incredible how great difficulties unassisted nature has occasionally overcome, with good uterine action. The fœtal cranium has by the over-lapping of the edges of its bones at the sutures, so accommodated its shape to a really contracted pelvis, as to admit of the child's being born alive, when from examination it had been almost regarded as impossible that there could be such a result. This is one of the best of warrants for our patience and placing strong reliance upon time. But there will occur degrees of deformity in the pelvis and even in the head, such as no natural efforts can possibly overcome. When the existence of these has been clearly ascertained, it may become a question, and certainly a subject for consultation, whether we are to let the powers of nature become further weakened by fruitless exertions, and consequent exhaustion, or either perforate the fœtal head, or, in the event of the child being in an unequivocal state of vitality, have recourse to the Cæsarean operation as the only possible chance of both child and mother surviving. It is a question worthy of more consideration than it appears to have received, whether the too frequent fatality attendant upon that operation, have

not been the consequence of the patient having been let go too far, and brought into an almost moribund state, before it was resolved upon? The operation in itself, though startling, does not appear by any means so desperate as most persons imagine. But there must be some *vis vitæ* to endure it.

CHAPTER IV.

PRETERNATURAL PRESENTATIONS AND LABOURS.

68. We have already noticed the marks by which preternatural presentations are to be distinguished (chap. II.); but it is fit that the subject should be here treated in a still more systematical and practical manner, in order that there might be no hesitation in the procedure of the practitioner when such irregularities occur. The most usual, and the least to be dreaded of the preternatural presentations is that of

THE BREECH.

We have spoken of the mode of recognising this presentation (26), of which we cannot be perfectly certain until after the rupture of the membranes. The evidence of the presentation, however, is more perceptible shortly after that occurrence taking place, than after the breech has become firmly engaged in the pelvis, for then the tension of the nates may, on a hasty examination, cause it to be mistaken for the face, or even for the head. But a timely attention, and a moment's careful examination, will obviate the mistake, as also will our waiting until the abatement of the pain shall have suffered the part in some measure to relax. From a breech presentation, the

danger to the mother does not appear to be increased in any degree worth notice, though parturition may be rather more tedious than in the natural order. Hence it is not customary to interfere with a breech case, even so far as converting it into a footling. But the safety of the child is in some measure hazarded in it, and we are called upon in this presentation to obviate by all means in our power a pressure on the umbelical cord, especially when the head is passing through the pelvis. To prevent fatal pressure, we should frequently ascertain that the funis is free and pulsating, and, whenever it appears to be on the stretch, we should relax it by bringing a little more of it down very gently, always keeping it in the widest or least dangerous part of the pelvis, namely, the sacro-iliac synchondrosis, and at the side of the head. The breech case is generally to be conducted very slowly, especially in the beginning, in order to afford time for the relaxation and dilatation of the parts before the head comes down, and thus to make as much room as possible for the funis. But should the pulsation in the latter be interrupted, and should we have notice, by a “convulsive jerk” of the child’s body, that the vitality of the fœtus is in imminent danger of being extinguished, it becomes our duty at such a moment to hurry the delivery as much as we can, lest the child should be lost. When the mouth can be come at *in vagina*, we may contribute to the commencement of the respiratory process by opening it with our finger, and also touching the tongue. But our chief dependance must be on as prompt a delivery as is compatible with prudence; and, as the case becomes a footling one, before the head can be engaged in the narrow part of the pelvis,—the time when fatal compression of the funis is most to be apprehended,—by carefully bringing down the feet, we have it in our power to afford considerable aid in forwarding the birth. Marked attention to the perinæum will be required in this form of labour. For, not only may a

laceration take place by a sudden jerk of the legs, before the knees make their appearance through the os externum, but a similar casualty may likewise occur from the arms. Therefore, the practitioner will have to maintain more than wonted vigilance in this case, and should be careful to extricate the legs and arms, at the os externum, with peculiar gentleness as well as judgment.

69. As it is our wish to be as explicit as possible on every practical matter, we shall follow the example of Professor Burns, and render more minute our directions as to the conducting of a breech-presentation. Our leading objects, therefore, being attention to the state and freedom of the funis and the support of the perinæum, we are to watch when the knees have arrived so low as to be on a line with fourchette. If at this time the feet do not slide down of their own accord, we must very gently bend the leg with one of our fingers, and bring down the foot: always guarding the perinæum from accident at such a moment. At the same time the funis must be attended to, and tenderly drawn down a little to secure free circulation in it. When the arms approach, we are, with great precaution, to bring them down likewise, for they may be turned up at the sides of the head, and the elbows may be in a position to do injury to the perinæum. But we must beware of employing force in this operation, lest we thereby fracture the delicate limb. Then, by passing our finger along the breast and neck of the child, until we bring it over the shoulder, and by pressing the forepart of the humerus downward, and backward, we shall be able to conduct the arms into a favourable position.* If the

* The opinion of Doctor James Dwyer, than whom we are not acquainted with a more thoroughly practical and accomplished Accoucheur, is by no means friendly to much interference in breech or footling cases. To too much meddling in footling presentations, Dr. Dwyer is disposed to attribute in

head be not turned down to our satisfaction, we should depress the chin or the mouth with our finger, making the chin to rest upon the breast. While we are guarding the perinæum with our left hand, we should with the right move the body of the child near the thighs of the mother, in order that the vertex may more freely rise from behind the pubis during the passage of the face. We are regarded as authorized in accelerating the latter stage of the birth of the body in a breech-presentation, far more than in a natural one, from an apprehension of compression of the funis taking place. Besides, the action of the uterus is usually deemed less vigorous in these than in natural presentations, and therefore as requiring more artificial aid.

no trifling degree the fatality attending them. Now, Dr. Dwyer's authority would weigh greatly with us in this particular, even if not backed by the influential facts of Professor Naegle, so demonstrative of the capability of natural efforts to produce a favourable result in those cases.

Dr. Dwyer's experience is not altogether in consonance with some of the directions which we have copied from Professor Burns. For instance, he says that he always found that the arms were more safely brought down, especially in the position mentioned page 82, by passing the finger along the side of the back, and thus over the shoulder. By this method he has found less difficulty in bringing down the arm, and he is satisfied that less risk of injury is thus incurred. With respect to footling cases, he has hardly ever seen it necessary to interfere before the feet were actually passing the vulva. As to turning the child into a different direction, when advisable, on the full dilatation of the os uteri, and before the feet have escaped, Dr. Dwyer does not regard this as objectionable interference. It will be seen when the breech comes down how the child is likely to pass, and then will be the time for altering the position, *if* it should really appear advisable to do so. But this is a very different matter from attempting those *twisting* experiments after the child has become engaged in the pelvis. We also quite agree with Dr. Dwyer that in shoulder or arm presentations turning should be the rule, and elevating the shoulder with bringing down the head the occasionally *possible* exception. Dr. Dwyer's views we believe to be sound and truly practical.

We must also recollect, as a warrant for our affording assistance, that though the funis may not be compressed, the placenta may be detached, in which case not a moment can be lost without peril to the child.

70. Dr. Burns, who appears to have devoted more attention to the minutiae of presentations than almost any other writer, notices some variety in the breech-presentation, which it is proper we should not pass over, as it may prepare the practitioner to give aid on its occurrence. He says, "When the thighs, in breech cases, are directed to the pubis or accetabulum, the face, as in the former case, is generally born first. It might be expected that it should always continue directed to the pubis, from under the arch of which it would come with some difficulty. But, whatever may happen in some instances, we usually find that the trunk does, in its expulsion, so turn round that the face is directed, at birth, to the perinæum, and we may, if there be any doubt of this taking place, aid it, remembering that if the left hip be foremost, as it most frequently is, the turn is to be made to the left of the mother, and *vice versa*. Should we be disappointed, and find the face, when the body is born, directed forward, we do not turn the body, which might twist and injure the neck, but introduce two fingers, and press with them on the head itself, endeavouring thus to turn the chin from the accetabulum to the sacro-iliac junction of the same side. If the position be not thus rectified, then we assist the descent by depressing the chin, and gently bringing it under the pubis; and this may be facilitated by pressing the vertex upward and backward, and making it turn up on the curve of the sacrum, to favour the descent of the face. We must be careful of the perinæum."

71. Professor Burns authorises our bringing down the feet in breech cases, at an early period of the labour, when the pelvis is deformed. Had not this precaution been taken in time,

the introduction of the fingers over the groin may enable us to aid the action of the uterus. But we are to be very cautious how we employ force, applied to the shoulders, for the purpose of disengaging the head, lest we may thereby do serious injury, even to the extent of separating the head itself. After having freed the funis as much as possible from compression, and gently depressed the shoulder in the direction of the axis of the brim, at the same time that we lower the chin on the breast with our finger, we are to employ the lever or vectis in whatever aid we afford to disengage the head, by depressing the latter in the proper direction with that instrument. This will be far more proper, and more likely to succeed, than having recourse to the very hazardous power of traction. A necessity indeed, may in such cases occur for a diminution of the head, and its extraction by the hook; but this, of course, ought to be our last resource, and after we have tried all other means in our power to relieve the arrest. Should the child have undergone severe pressure in a breech case, it may be necessary to have recourse to surgical measures to avert the consequences. But fomentations, with the aid of spirituous applications, not too strong, very generally succeed in such cases. *

PRESENTATION OF THE FEET.

72. We have noticed (28) the signs of this presentation, which in its consequences and management has a great affinity with the one of which we just have treated. The greater the obliquity of the fœtus in utero, and the lower the feet, the

* PRESENTATION OF THE NATES.

Dr. Rigby, in addition to the Mechanism of *Natural* parturition, has also translated, and given in the same little volume, observations by Professor Naeglè on presentation of the Nates.

more chance we have of their presenting. We find the legs laid along the backs of the thighs, and the feet turned up along the front of the tibiæ, in such a manner that the heels first meet the finger, being the lowest parts; or the feet, crossing

The reader will no doubt be desirous not to be left in ignorance of the German Professor's views on this branch of the subject; and we accordingly will proceed to a brief digest of them.

When the child presents with the nates, observes Dr. Naeglè, in some cases, for instance in emaciated subjects, where the abdomen already stretched by previous pregnancies, has retained a certain degree of softness or flaccidity, and where the uterus is distended with a moderate quantity of liquor amnii, the head can be more or less distinctly felt to one side through the upper part of the abdominal parietes.

On examining per vaginam a large roundish body will be perceived presenting, but which from its softness cannot be mistaken for the head. Towards the end of the pregnancy (whether the woman be pregnant for the first time or not), the nates which are embraced by the inferior segment of the uterus, do not sink as low into the superior aperture of the pelvis as the head does; on which account it occasionally happens, that at the beginning of the labour, and even until the rupture of the membranes, no part of the child can be felt presenting; considering all things, the diagnosis of a presentation of the nates, before the escape of the liquor amnii, is far from easy, but after this has taken place, the separate parts, as the nates with the division between them, the contracted, or if the child be dead the relaxed sphincter ani, the parts of generation in the fissure formed by the two thighs which are turned upon the abdomen, the extremity of the sacrum, &c., the escape of meconium, or the finger of the examiner being soiled thereby, afford an easy means of distinguishing the nates, if the parts, which with the exception of the sacrum are all soft, have not lost their peculiar form through swelling, and thus become indistinguishable. As the nose is the most certain mark by which we may distinguish, not only a presentation of the face, but also its direction with regard to the pelvic parietes, so in this case are these two purposes supplied by the sacrum.

Since the nates present themselves at the time of labour in a greater variety of manner than the head does, and since this produces no essential or peculiarly prejudicial change in the mode in which the head passes through the pelvis, it will be

each other, may present the sole to our touch, or, in some cases, either the side of the foot or the toes. One of the feet, as we remarked (28) may alone come down, while the other retains its ordinary flexed position. Some writers consider

sufficient to describe the two following species as the most usual ones.

1. *Presentation of the Nates with the back turned forwards, towards the anterior parietes of the uterus.*
2. *Presentation of the Nates with the back turned towards the posterior parietes of the uterus.*

In both cases, one usually finds the back of the child, at the beginning of the labour, turned more or less sideways, viz. the ischia running parallel with one or other of the oblique diameters of the pelvic entrance.

The first chief division occurs more frequently than the other, but at the same time the difference between the two in this respect is not great.

The frequency of the nates presentation, taken on the whole, compared with the other positions where the child lies with its long axis in that of the pelvis, Professor Naeglè found to be as two out of a hundred labours. He also remarks, that presentations of the nates or feet occur relatively less frequently in women pregnant for the first time, than in those who have already had children, especially in those who have had large families.

In every case, whether the nates have at first a completely transverse or oblique direction, they will be always found, on passing lower into the superior aperture of the pelvis, to have taken an oblique position, and that ischium which is directed anteriorly to stand the lowest. They pass through the entrance, cavity, and outlet of the pelvis in this position, which is oblique both as to its transverse diameter and as to its axis.

Thus, if in the first species the left ischium were either originally directed more or less forwards (which is usually the case), or had taken this direction in passing through the superior aperture, the nates descend in this direction into the pelvic cavity, with the left ischium during the whole time standing the lowest; and this is the part, during the further progress of the nates, which first passes between the labia, as the os externum dilates.

As they advance, and while the left ischium, which is directed forwards and always somewhat to the right, comes

this an advantage, as giving, in their opinion, some security to the funis. But, taking every contingency into account, it appears to us preferable that both feet should come down together; first, because in affording aid by one leg the practitioner is far

completely under the pubic arch and presses against it, the other ischium, which is situated in the opposite direction, and which has to make a much greater circuit, passes forwards over the strongly distended perinæum, so that when the pelvis is born, the abdomen of the child will be directed towards the inner and posterior surface of the mother's right thigh. The rest of the trunk follows in this position; and as the breast approaches the aperture of the pelvis, the shoulders press through its superior aperture in the direction of the left oblique diameter; and during its passage (*viz.* the breast) through the pelvic outlet, the arms and elbows, which were pressed against it, are born at the same moment. But, whilst the shoulders are descending in the above mentioned oblique position, the head, which during the whole progress of the labour rests with its chin upon the breast, presses into the superior aperture in the direction of the right oblique diameter (*viz.* with the forehead corresponding to the right sacro-iliac synchondrosis), and then into the cavity of the pelvis in the same direction, or one more approaching the conjugate diameter. After this it presses through the external passage and the labia in such a manner, that whilst the occiput rests upon the os pubis, the point of the chin, followed by the rest of the face, sweeps over the perinæum as the head turns on its lateral axis from below upwards.

But it is sometimes the *right* ischium, which in this chief division is either originally turned forwards, or in process of time assumes this direction. In this case, the child passes through the pelvis in the same manner as before; only with this difference, that the surface of the body takes of course a different position with respect to the pelvic parietes, *viz.* its anterior surface, which in the former case corresponded to the right side of the pelvis, will here be directed to the left; and the head will press through the superior aperture of the pelvis in the direction of the left oblique diameter (the forehead passing before the left sacro-iliac synchondrosis).

As in the positions of the cranium, the swelling of the integuments is chiefly met with on that parietal bone which during the passage of the head through the pelvis is situated lowest,

less likely to conduct the child fairly through the pelvis than by affording assistance with the two, for in the latter case his traction is equal. But a far more important objection to one of the legs remaining up in utero while the other comes into the vagina is, that the one which remains above is liable to stick across the pelvis and thus become fixed; as Dr. Rigby observes. La Motte declares that such an awkward circumstance occurred in his practice. It therefore appears most

and that spot with which it enters the external passage, so in this case the livid-coloured swelling appears on that part, which, directed forwards, was situated lowest during the passage of the nates, and with which the nates were born.

In the second chief position, *viz.* with the anterior surface of the child corresponding with the anterior abdominal parietes of the mother, it is chiefly the left ischium which is either originally situated forwards, or takes this direction as the nates sink through the superior aperture of the pelvis, which latter preserve this oblique direction during the farther progress of the labour, both whilst pressing into the pelvic cavity and entering the external passages. If the ischia be already born, the anterior surface of the child turns itself to the right and backwards, either immediately or as the rest of the trunk advances; but the manner in which the head in this case presses through the entrance, cavity, and outlet of the pelvis, is the same as has already been described for the *first* chief position.

It does not unfrequently happen, that in this species of nates presentation, the right ischium is either originally directed forwards, or takes this direction. In this case the nates will move through and clear the pelvis in the same manner as before, only with the difference, of course, that the anterior surface of the child will be situated forwards and to the left. The child also makes the turn, as in the other case, either immediately after the nates have cleared the os externum, or when the rest of the trunk has advanced further, only that here its anterior surface will turn backwards and to the left; in like manner also, as the head presses through the superior aperture, the forehead will here descend, corresponding to the left sacro-iliac synchondrosis. It sometimes happens in the one or the other of these two cases, especially where the head is small, that the body, which, directed with its anterior face forwards and to the right, is born as far as the shoulders, turns itself

judicious to bring down both the feet together, unless we adopt the advice of the justly celebrated Dr. Hunter, and convert footling into breech cases. But this advice does not seem to have met the countenance of practitioners. Our primary attention in a footling case is to make the toes turn toward the sacro-iliac articulation of the mother, and, as we would counsel, to bring down both the legs in our grasp. After the dilatation of the os uteri has fully taken place, we are to pass up the hand in as unirritating a manner as possible, lay hold on the legs, and, if the uterus be sufficiently quiescent, turn the child in the direction indicated, bring the feet into the pelvis, unless we find that they have come down properly of their own accord, which they often do, indeed, usually, when both feet,

then (and frequently during the course of a single pain, by which it is fully expelled), from the side completely forwards, and then to the opposite side; so that the anterior surface of the child, which for instance in the first case was, before the pain came on, still directed forwards and to the right will be afterwards instantly, in the twinkling of an eye, situated backwards and to the left.

It sometimes also happens in presentations of the nates, that the head does not rest with the chin upon the breast, but the occiput, as in those of the face, is pressed against the nape of the neck; in this case the passage of the trunk through the pelvis, according to which species of nates' presentation it may be, follows, in the manner already described, as far as the head; this, with the occiput depressed on the nape of the neck, enters the superior aperture with the vertex corresponding to one or the other ilium of the mother; and in passing through it, and pressing lower into the cavity of the pelvis, the vertex gradually turns more and more backwards, so that when the trunk is born, the arch of the cranium is directed to the hollow of the sacrum, and the inferior surface of the under jaw to the internal one of the symphysis pubis. The passage through the inferior aperture takes place in the following way; viz. whilst the under jaw presses with its inferior surface against the os pubis, the point of the occiput, with the vertex followed by the forehead, sweeps first over the perinæum.

present together. A very excellent method of discriminating the legs from the arms is by bearing in mind that the elbow is far more acute and small to the feel than is the knee. We should, therefore, convince ourselves by examining the condyles and breadth of the latter. Our hold must be carefully retained, especially when we find that there is much of the *vernex caseosa* on the legs. Our attention to the funis is at least as requisite in the footling as in the breech case. In the former, the time for our solicitude with regard to compression will be when the knees have protruded, and the part of the thighs near the nates presents itself at the os externum. At that time, if the face be toward the pubis, we may aid its turn to the sacrum by grasping the thighs and *very gently* moving the body round, which of course can be best managed when the uterus is not in powerful action. There is no difference whatever in our conduct from this time, and that which we pursue in the advanced period of a breech case.*

* THE FEET PRESENTING.

In Professor Naegle's interesting work, to which we have already been so deeply indebted for precise views on the mechanism of parturition, a few sections are devoted to footling presentation, of which we are about to furnish a digest in the present note.

Footling births, says our valuable author, are those labours where the feet are found presenting; both feet usually present, less frequently only one.

If the membranes be not distended, the feet may be distinguished through them, and still more easily after their rupture, by their peculiar form, by the toes, which are shorter than the fingers, by the flat sole of the foot, which is longer and narrower than the palm of the hand, by the heel with the ancle bones on each side. The back of the foot is always bent up towards the tibia, and the heel is consequently the lowest. From this reason, and on account of the similarity between the ancles and the condyles of the elbow joint, the heel can be easily mistaken for the elbow, which it certainly considerably resembles; the

72. In case a knee and a foot, or both knees, should present, the tumour will be larger than that of the feet, and we must be cautious of not mistaking it for that of the shoulders or the breech. Although in a well-formed pelvis a presentation of

sole of the foot, however, on a closer examination will remove all ambiguity. If the feet be still situated high up, it is frequently not easy to distinguish the position of the child's body from their direction, on account of their extreme mobility, and especially if (which is often the case) they be crossed over each other, with the toes of the one foot situated close to the heel of the other.

In examination, the knee may be distinguished from the elbow, for which it may in some degree be mistaken, in that it is thicker, that it has two prominences and a depression between them; while, on the other hand, the elbow, which is thinner, presents to the feel, between the two prominences, a projection in which it seems to end.

As in presentation of the nates, it will be sufficient here to adopt two chief divisions of the feet presentation, *viz.* :

1. *With the toes directed backwards*; and
2. *With them forwards.*

The feet frequently change their position as they pass through the pelvis, nor do they receive a distinct direction until the ischia have engaged in its superior aperture, where the child then passes through the pelvis in the same manner as it does in labours where the nates present; of which we have before offered a description. If the feet be found near the os uteri, or inferior aperture of the pelvis, with the toes turned forwards, we have just as little cause to fear that the child will be born with the anterior surface of its body directed forwards, as in a case of the first division of the nates presentations.

Since in labours where the feet present, the body of the child opposes less resistance than in those where the nates present, in which case the thighs are pressed upon the breast, and the child enters as it were doubled into the passages destined for parturition, it is easy to understand why in the one case the body passes through the pelvis more quickly and with greater facility than in the other.

In presentations of the nates, and especially in those of the feet, there generally escapes at the moment that the membranes are ruptured, a greater quantity of liquor amnii, and continues

the knees, or, as is most common, of one knee alone, may proceed successfully without any interference on the part of the practitioner, it is generally made a rule in such case to reduce it to a state of a footling presentation, by bringing down the feet, as advised above.

to do so for a greater length of time, than in presentations of the head.

This is the usual course of labours where the nates or feet present, if the fœtus, the passages destined for the process of parturition, and the expelling forces be in a proper condition, and if nature be not disturbed in her occupation of expelling the fœtus, by any external cause, for instance, pulling the child, attempting to turn it round, &c.

If because the nates or feet appear to advance too slowly, a degree of extractive force be applied, this will have a great and important influence on the progress of the labour. For where it is nature, or in other words, the uterus, that moves the child on by means of the pressure which it equally and uniformly exerts; in the first place the chin during its passage through the pelvis will constantly remain pressed upon the breast and will have the effect of directing the head into and through the pelvis in the most favourable position. Secondly, the arms remain pressed upon the breast and are born with it. Thirdly, the soft passages from the gradual advance of the child are dilated sufficiently slowly, so as to oppose less resistance to the head as it follows; and fourthly, from the progress of the labour being sufficiently slow, the uterus will be but gradually relieved of its contents, its contractile power increased, and itself rendered capable, by means of sufficiently powerful contractions, of forcing the head into and through the pelvis within a proper period of time. But if any extracting force be applied to the child, from which the pressure that results from the uterine contractions is removed, and which acts upon the child in every direction, and keeps the chin and arms pressed upon the breast, the arms slip upwards on each side of the head, the chin quits the breast, and the head together with the arms approach the aperture in a most unfavourable position; by which their entrance and passage through the pelvis are evidently rendered difficult. The soft passages become too forcibly and suddenly dilated, the contractile power of the uterus is injured from its contents being too rapidly withdrawn, and hence it loses the power of pressing the head into and through the pelvis.

73. In the event of twins—and the stethoscope ought always be used to aid in the discovery of them—there is a possibility of a foot of each of the children coming down at the same time. This it is true is a very improbable occurrence, for in a case of a plurality of children they are usually in separate membranes. But the practitioner has the means of guarding against the consequences of the possible circumstance. He is first to ascertain that the feet are right and left, which he can easily do by remarking the toes; and then, should he still entertain a doubt, he may pass up his finger on the first limb he takes hold of, from that to the genital parts, and thence down along the second thigh and leg.

SHOULDER AND ARM PRESENTING.

74. When this takes place, as described (30), it imperatively calls for the interference of the practitioner, and it is, we may say, the universal practice to convert it into a footling case, by turning the child. But it has been attempted to return the presenting arm or shoulder, and to bring down the head; and only to give up this endeavour, and have recourse to bringing down the feet, when the former method proves impracticable. Now we must always bear in mind that in a contracting uterus, we have seldom time for much deliberation, and must be prompt in adopting those measures which appear to be the most feasible, availing ourselves of every favourable moment. If at the time when we discover the presentation, the bulk of the waters should not have been evacuated, and if the uterus continue either quiescent or moderate in its action, we may with the greatest propriety make an effort to raise up the presenting shoulder, or to return the arm should that have come down, supporting it until we have brought the head into a favourable position. But we must confess that it is not always that this

is feasible. If the contracting uterus be in vigorous action, such an attempt would be futile and inadmissible; for we must remember that any persistent force applied in opposition to the action of the uterus may cause a rupture of that organ; and we may feel too happy, under such circumstances of uterine action, at being able, with the greatest caution and dexterity, to slide down the legs, and convert the case into a footling one. It is necessary to remark that in the majority of cases where the superior extremities present, it is in the fore part of the uterus, and toward the umbilicus of the mother we shall find the child's feet. We have before said that Dr. William Hunter's proposal, in the event of a shoulder presentation, to push up the shoulder and convert the case into a breech presentation, has not met the general countenance of the profession. A few writers, however, express themselves favourably towards it, when it can be executed with facility.

TURNING THE CHILD.

75. If we resolve upon turning, which is a very common resource in Midwifery, we are not of course to attempt it before the os uteri has acquired a proper state. It must, we are told as a rule of practice, be at least dilated to the size of a half-crown piece, and in a yielding state, before we proceed to introduce the hand into the uterus for the purpose of turning. If we have to pierce the membranes, it should be done as directed (58), we thus can always insure a sufficient quantity of the liquor amnii to turn, as Dr. Mason Good expresses it, as if "in a bucket of water," and in some rare cases even when the membranes have spontaneously ruptured, the entire of the waters may not have run off. The practitioner should take off his coat, tuck up his shirt sleeve, and he may smear the back of the hand and part of the arm with some lubricating substance.

as hog's lard or cold cream, before he proceed to turn. Having with all possible gentleness got the hand into the uterus, reached the feet at the anterior part of the organ, where he will almost invariably find them, and made sure that he has not mistaken the elbows for the knees, he is cautiously to grasp the ancles, and steadily, but by no means hurriedly, bring down the feet with the toes turned toward the sacrum, or sacro-iliac junction. Should the cervix uteri contract spasmodically at this time, it will be one of our greatest difficulties, but this is by no means to be overcome by precipitately bringing down the feet. On the contrary, we are still to maintain the position of the hand in the uterus, and rather endeavour to dilate the cervix than to retreat from it. Sharp uterine action may, however, demand the administration of an opiate, or in preference the mixture before recommended (19), before we proceed to turn, in order to suspend the contractile power. This should be timely considered. The ordinary position of the female in parturition will be that in which we shall perform the operation, unless there be some very obvious reason for changing it for another position. Some persons may prefer turning with the left hand, and in such case may change the patient to her right side. The fingers at first are to be introduced in a conical form, and may, as Dr. Denman observes, require to act with a semi-rotary motion to overcome the resistance of the vagina, the os uteri or even of the cervix uteri. Such resistance, however, we must overcome by patient perseverance and gentleness, force being out of the question. Therefore, if any degree of dilatation be required, it must be executed slowly. And it is sometimes requisite to continue this dilatation longer than would be indispensable to effect the mere introduction of the hand, lest a contraction round the wrist should afterwards take place, and embarrass the operation. When we have introduced the hand fairly into the uterus, the fingers must be carefully con-

ducted along the child's sides, avoiding contact with the uterus, for fear of exciting its contraction, sliding the hand on the child's thigh, until we reach the feet. If the latter do not lie contiguous to each other, we may find it necessary to bring down the foot we first grasp, though, as we have more than once remarked, it is far more desirable to bring them both down together, when practicable. Of course the caution with regard to the possibility of mistaking the legs of different children will be here borne in mind. We are advised to make use of a sort of waving motion, together with a secure grasp of the feet, in bringing them gradually down into the pelvis. A gush of the waters may be expected to follow the withdrawing of our hand, and the contraction of the uterus speedily to succeed it. On the accession of the pains, we bring down the feet through the os externum, and merely co-operate prudently with the uterine action.

76. It is an invariable rule in turning not to persist in our endeavours to execute the operation during a forcible contraction of the uterus, but to wait till the pain subsides, and during the interval, to keep the hand in such a position as shall induce least irritation in the uterus. This rule is to be observed as well in carrying up as in bringing down the hand. As the phrase is, "we should not act during a pain." The best state in which to keep the hand during such occasions of inaction is flat on the child. But we must be quite as cautious that we avoid pressing upon the foetal abdomen, as on the uterine walls; for by pressure upon the abdominal region of the child we may produce the same consequences that compression of the funis does. The safest parts, therefore, on which to rest the extended hand, during a pain, are either the side or the thigh. Sometimes, after we have brought down the feet, the uterus will contract so firmly on the body, that we cannot for some time bring down the breech. This we may regard as a case of spas-

modic contraction.* Though the feet are most commonly to be found at the anterior part of the uterus, still there may be an exception to this rule: for it has hapoened that the child's back has been turned to the mother's abdomen, and, in such a case, the feet will consequently be at the posterior side of the uterus. This position will be ascertained by remarking how the scapula is on our making an examination. Or if the arm be protruded we must observe how the palm of the hand lies. If it be directed to the front, we must look for the feet in the fore-part of the uterus, and *vice versa*. Doctor Burns says that we may sometimes find it useful in turning to make the patient lie forward on the side of the bed, with her feet on the ground, placing ourselves behind her.

77. When we have observed every possible caution, and patiently sought an opportunity by waiting for the subsidence of uterine action, we most commonly will be crowned with success; but cases may occur, either from immoderate size of the child, or persistent uterine contraction, in which our most strenuous efforts thus to effect delivery will fail. It then becomes matter of serious deliberation, when turning has proved to be impracticable, and the child remains alive, whether the Cæsærean operation should be performed. This, however, is a matter not to be decided without professional consultation, where opportunity for such is at our command. If the child be dead, we can have no hesitation in forwarding delivery by the crotchet, by pulling down the breech if practicable, by diminishing the head when otherwise too large to pass through the pelvis; or even by bringing away the body by piece-meal. Dr. Burns admits that the perforator ought to be used “when on the one hand, the presentation cannot be raised to admit of

* It is particularly requisite that, in such cases, the uterus should be emptied *very* slowly.

turning ; and, on the other, there is no appearance of the process immediately to be described, under the name of spontaneous evolution taking place." Now it is Dr. Collins' opinion that, on spontaneous evolution, we should never calculate as a practical resource.

78. Dr. Denman cautions us against any violent efforts to bring the child's face toward the sacrum, when we find that operation strongly opposed by the uterus ; for he says we should be likely to effect far more injury by such an effort, than by permitting the child to be expelled in the confessedly less favourable position of the face to the pubis. He adds that when the heels or back parts of the child are turned towards the pubis, the feet, wrapped up in a cloth, are to be held firmly round the ancles, and, when the pains come on, we must extract in a straight direction, or from side to side, or from the pubis to the sacrum ; taking care that we do no violence, or, by too large a sweep, run the risk of hurting the child, or of lacerating the external parts of the mother. In the intervals of the pains we must rest, and in this manner proceed, assisting the efforts of the mother only at the time of our making ours, and not rendering the delivery wholly artificial. When the breech of the child has arrived at, and begins to dilate the external parts, we must proceed yet more slowly, giving time for their full dilatation, supporting and favouring any part which may be immoderately distended, and guiding the child in a proper direction, by turning its back towards the pubis as it advances. The breech being expelled, the funis soon appears, and a small portion of it must be drawn down, to prevent its being on the stretch. Then, wrapping a cloth over the body of the child, which must be held as close to the mother as it conveniently can, and calling to her for voluntary exertions, the child is to be speedily extracted in the manner already described." Dr. Denman also suggests (or rather repeats the suggestion of Dr. Pugh) the

propriety of introducing a curved tube into the child's mouth in this situation.

79. But while we feel it a duty incumbent on us not to pass over any observations of so distinguished a professor as Dr. Denman, still what we have said respecting every facility of averting the child's danger by all reasonable aid in our power must not be forgotten. In short, our conduct must be regulated by circumstances, as a discreet judgment may dictate, keeping general principles before our eyes, particularly the risk which the child incurs. It is the urgent necessity of the case which justifies us in calling for what we would under other circumstances deprecate, namely, the voluntary exertions of the mother when the child was about to be expelled.

OF TURNING WHEN VIGOROUS ACTION HAS COMMENCED.

80. The formidable nature of such a dilemma, as the presentation of a superior extremity with vigorous uterine action, demands an examination into whatever resources science may have in store for such an emergency. Our previous remarks were chiefly applicable to a case not so extreme; and though we hinted at the possibility of the Cæsarean operation becoming justifiable in unfavourable circumstances, still the feeling of the profession runs so strongly against that operation in this country, that every other mode of proceeding must be considered before we think of adopting it. It is not always that an obstetrician has an opportunity of turning before the evacuation of the waters and the setting in of strong pains: in fact, he may be called in just at such a moment, to succeed, perhaps, an attendant of less skill, and to remedy the evils of neglect. He may find the patient with the uterus emptied of the entire of the liquor amnii, with the labour pains in full pro-

gress, and a most dangerous presentation of a superior extremity. Under all these discouraging circumstances, anxiety for the safety of the mother as well as of the child, calls upon him to act. In such a case it becomes his duty to proceed with the calmest deliberation and foresight. He must fully ascertain all the circumstances of the case by the minutest examination, so that no false step shall be hazarded through mistake of the exact nature of the presentation. He must throughout all his proceedings bear in mind the situation of the child, and the condition of the uterus with respect to the species and degree of its contraction, so as to be able to suit his operations and management steadily to them. The great difficulty he has to contend with manifestly is, uterine action, for let this be suspended, and the adverse position of the child may be rectified, as we have seen. Now, systematic writers have distinguished between the several kinds of uterine contraction, which they regard as of three species. The first of these species is the permanent contraction which follows the evacuation of the waters, and which may occur to a certain degree where the pain is by no means of a violent description. This is, as it were, the operation of that intrinsic power in the uterine fibres, to diminish the general capacity of the organ when a distending agency (as that of the waters) has been removed. The second species, according to Dr. Denman, is "the occasional or extraordinary contraction of the uterus, by which whatever is contained in its cavity is ultimately to be expelled; which returns at intervals, and is so constantly attended with pain, that the terms pain and action are in such cases used synonymously." The third kind is the irregular or partial contraction, sometimes taking place in a part or parts of the uterus, of a spasmodic nature, and often, if not always, operating more as an obstacle, than as facilitating the expulsion of the uterine contents. This term, spasmodic, has been applied to "every morbid, irregular,

or excessive action." This, perhaps, may be overstraining the term, but we shall not here pause to criticise too closely. It is, however, to either the extraordinary or the irregular action of the uterus, that the difficulty and danger of turning is to be ascribed; and while such action is energetic the operation cannot be accomplished, for, by opposing this resistance by mere force, a rupture of the uterus may take place. Agitation of mind is likely to increase or prolong the spasmodic action; wherefore the practitioner must employ every means to calm his patient, and allay her apprehensions, whether by the coolness and steadiness of his own deportment, or directing the attendants not to betray any symptoms of consternation. If the patient be hot, feverish, and considerably excited, a few ounces of blood may advantageously be taken away, and an emollient enema should be administered. We should certainly recommend the opiated and antimonial mixture (19) to be immediately entered upon; but we shall also mention what eminent authorities advise in such cases. It is recommended to make a pill of solid opium, containing about three grains, and to let this remain in the rectum after an anodyne enema has been administered. This is found to calm uterine irritation considerably. The irregular action of the uterus, also, has a tendency to wear itself out, and should therefore be afforded some delay, to produce this effect. But should that action be too persistent for our purpose, we may find it necessary to exhibit a large opiate (though we greatly prefer the combination of opium and tartar emetic) in order to overcome the morbid excitement of the system. Moderate doses of opium are often found to augment rather than allay uterine action; it is, therefore, the opinion of respectable authorities that we are justified in such a case as that under consideration, in administering at least three times the ordinary quantity. Dr. Andrew Blake advises us to give 120 drops of tincture of opium "or more,"

that is a quantity equivalent to upwards of nine grains of the solid drug! But whether we venture upon this large dose, or restrict ourselves to a quantity somewhat more moderate, we are to look for its sedative effects in about twenty minutes, and when we find the patient sinking into a state of repose, we should introduce the hand into the uterus, as before directed, and, with all possible tenderness and caution, but with steady determination, proceed to lay hold of the feet of the child, fully assuring ourselves that we do not mistake a hand for a foot, and also taking care that we do not suffer the feet to escape from our grasp through precipitation in endeavouring to bring them down. Dr. Denman directs the practitioner to adjust the noose of a ribband or garter on his right hand, which, after he has obtained a proper grasp of the child's feet, or foot, as opportunity shall permit, he is to transfer with the fingers of his left from the right hand to the fœtal ancle or ancles, draw sufficiently tight to secure it, and then bring it down through the os externum, to aid his subsequent operations. By this contrivance, we shall be able to guard against any unpleasant consequences from the body of the child getting across the superior aperture of the pelvis, and appearing to remain stationary there. In the event of this happening, we are directed to take the two ends of the noose in our right hand; and passing the finger and thumb of the left in the form of a crutch into the arm-pit of a child, we must extract with the right hand, and at the same time raise the body of the child with the left, till the child is disengaged, and there is sufficient room for the entrance of the hips into the pelvis." Even in our attempt to introduce the hand into the uterus for the purpose of turning, a similar expedient as that just described may be required, when, from the fœtal shoulder being forced down into the pelvis, and jammed there by previous uterine contraction, the ascent of the hand is opposed. Under such circumstances, the

"crutch" is to be formed with the forefinger and thumb of the right hand, and persistent support applied with it to the resisting arm-pit, patiently continuing our efforts, and taking advantage of every intermission of uterine action, until we succeed, which we ultimately shall, in returning the presenting part.* But though, by the means pointed out, we may have produced a comparative state of uterine quiescence, before the introduction of the hand, we are to anticipate that the hand itself will awaken the organ to more or less activity. As we before observed (75), the hand, during the continuance of any pain, must be quietly maintained in that position which is best calculated to prevent all contact with the uterine walls. We must avoid letting the knuckles touch the uterus, and quietly await the moment of tranquillity to complete our object, resting now and again, whenever any indication of approaching uterine inquietude appears. By such a regulated perseverance we shall seldom be disappointed.

81. It will be proper for us to register in our memory the *modus operandi* of the forms of irregular contraction of which the uterus is susceptible, as we shall thereby be the better prepared to manœuvre against them. The cervix is frequently in a stronger state of contraction than any other part, so as to oppose no trifling obstacle to the introduction of the hand. When this is overcome, there seldom is much difficulty in the operator's hand reaching even the fundus, or such part as may contain the child's legs. But, besides this contraction of the cervix, several other contractions of the uterine fibres may take place. Sometimes the uterus will contract in the centre, at other times throughout its entire length. At times partial contractions, as if the organ were bound with cords, will be experienced, and even become painful to the hand; and occa-

* Beware of rupture, unless you first produce quiescence!

sionally a sort of globular contraction of the entire uterus, or else a longitudinal contraction thereof, will take place. In the globular contraction we necessarily have less difficulty in securing the feet than in any other. When we have taken a firm hold of them, there is seldom much difficulty, at a favourable moment, in turning the child, that is, in the globular contraction; but the difficulty is certainly greatly increased by a longitudinal contraction. Yet even in this, with perseverance, we shall succeed.

SPONTANEOUS EVOLUTION.

82. Though it is Dr. Collins' opinion that we should never calculate upon spontaneous evolution taking place, it is of so extremely rare occurrence, and therefore that we are to regulate our practice as if there were no such thing, still we must not pass by the subject altogether. It is not quite impossible that such a complication of circumstances may take place, in a presentation of the superior extremities, as may defeat the best regulated efforts to turn the child. This is rare, indeed, and, when it has occurred, a continuation of vigorous uterine action has been known to effect what is termed spontaneous evolution, so as to deliver the child, occasionally (but very seldom, doubtless) alive, after artificial aid had failed to be of any utility. But though it be just possible that such a fortunate occurrence may take place, and affords a slight ray of hope in the most cheerless conditions, still it will not excuse the practitioner from trying every other resource for affording his patient a reasonable chance of safety, and acting, as far as he can, upon the established rule, that in presentations of the superior extremities, the child ought to be turned, and the case made a footling one. Dr. Denman, who has paid marked attention to the process of spontaneous evolution, and who was the first

English writer that particularly brought the matter before the faculty, says, "As to the manner in which this evolution takes place, I presume that, after the long-continued action of the uterus, the body of the child is brought into such a compacted state, as to receive the full force of every returning pain. The body, in its doubled state, being too large to pass through the pelvis, and the uterus pressing upon its inferior extremities, which are the only parts capable of being moved, they are forced gradually lower, making room, as they are pressed down, for the reception of some other part into the cavity of the uterus which they have evacuated, till the body turning as it were on its own axis, the breech of the child is expelled, as in an original presentation of that part. Nor has there been any thing uncommon in the size of the pelvis of those women to whom the case has happened, nor have the children been small, or softened by putrefaction, because one or more children have been in this way born alive. I believe, on the contrary, that a child of the common size, living or but lately dead, in such a state as to possess some degree of resiliency, is the best calculated for expulsion in this manner. Premature or very small children have often been expelled in a doubled state, whatever might be the original presentation, when the pelvis was well formed, or rather more capacious than ordinary; but this is a different case to that we are now describing." There has, however, been some diversity of opinion with regard to the exact manner in which the evolution has been effected, though, as to the fact of its having in some instances taken place, there can be no doubt. Dr. Kelly says, that "the original presentation can only recede, not during the action of the uterus, but during its relaxation." And this appears reasonable, though, perhaps, it may not be *conclusive* against Dr. Denman's view: for the latter infers that the superior or presenting extremity opposes less surface against the uterine contrac-

tion than does the inferior portion of the child, so that the former may gradually supplant the latter, the uterus, even with its contraction being a less impenetrable substance than the solid portion of the pelvis, which in this case we may suppose to have come directly in contact with the presenting part; though we must acknowledge the latter to be rather a forced supposition. Dr. Douglas denies the possibility of the upper extremities again returning into the contracting uterus; and, indeed, there is no small difficulty in imagining such a return to take place. The last-named authority explains the process very ingeniously, by describing the shoulder as forced down by strong pains; the clavicle, he says, lies under the arch of the pubis; the ribs press out the perinæum, and then appear at the orifice of the vagina. As the expulsion goes on, the clavicle is found on the pubis, and the acromion rises to the top of the vulva. Presently the arm, shoulder, and one side of the chest are protruded, and the breech has got into the hollow of the sacrum. By further efforts, the breech and [lower] extremities are expelled, but neither the arm nor the shoulder ever retire. Dr. Burns' opinion, in this curious case, is, that "When the shoulder is forced so low as to protrude at the arch of the pubis, the head is laid on the iliac fossa, and the breech is over, but yet not so low as to rest on, the opposite fossa, at the sacro-iliac junction, and the trunk, at the end of the thorax, is at the brim. A continuance of the expulsive force makes the side present at the orifice of the vagina, and the breech, at this time, is entering the brim of the pelvis. The head still remains in its former position. The breech then descends lower, by the sacro-sciatic notch, and, sweeping down from a side, it distends greatly the perinæum. It then turns forward, and is born as in a common breech-presentation, only the arm and side are, at the same time, protruding at the pelvis. In this process the child must be very much curved, but, if the

action of the uterus be strong, and laceration do not take place, the bending may be accomplished to a sufficient degree."

83. However curious and amusing those speculations may be as to the exact order of this remarkable process, it is of far more practical importance to consider how the obstetrician should act, when he neither can turn the child, nor finds a chance of the not very safe phenomenon of spontaneous evolution occurring. Dr. Denman says that when the embarrassing predicament has taken place of the pains falling off, and thus disappointing the hopes of a spontaneous evolution, he nevertheless has found the child brought into such a state that afterwards he could pass his hand with ease, and bring down the feet, though in every attempt to do this in the beginning of the labour he had been foiled. In one case, where he failed to bring down the inferior extremities, he had no difficulty in fixing an instrument upon the curved part of the body of the child, or in bringing it away with entire safety to the mother. It was before presumed that the child was dead; and the sole object was now to free the mother from her danger, and with her safety, remarks Dr. Denman, no appearances of the child, however disagreeable, are to be put in competition. Under the most difficult circumstances, and when the delivery appears to be impossible without greatly mutilating the child, several proposals have been made. Some authors advise the separation of the head by an instrument not likely to injure the mother, as a blunt hook; and, subsequently to the birth of the body, to extricate the head by perforation, &c. But Dr. Burns thinks that, in such an extreme case, by opening the back, or the latero-posterior part, and then dividing the spine, we can most easily accomplish our purpose, as we then can bend the body more, and more readily bring down the breech. The abdomen, he adds, can, if necessary, be opened, and the contents both of it and the thorax be sufficiently removed to make

the subject pliable. He recommends this process, together with fixing the crotchet upon and bringing down the pelvis, far more than having recourse to decapitation, after which the removal of the head is not altogether so easy as may be imagined, from its being very liable to slip from the perforator. To such extreme measures we are certainly justified in having recourse, when no other method offers of saving the mother's life.

84. A hand, or an arm, may present with the head. In a well-formed pelvis delivery under such circumstances is possible without interference, though not without delay. But, in a deformed pelvis, this might be a very serious obstacle. If it be discovered in time, the practitioner ought to return the arm, and detain it until the head becomes engaged in the pelvis. When, however, he fails to do this, he must be always on the watch to afford such aid as after circumstances should require, or render possible. If, in such a case, we have no opportunity of interfering until the birth of the child, there may be much tumefaction, from this circumstance, on the arm or arms of the infant, and it may require the use of fomentations, or poultices, as the case may be; or mere friction may, in slight cases, suffice. Sometimes the elbow descends with and just before the head. In this case, the mere introduction of the finger of the practitioner, and the *very cautious* bending down of the child's fore-arm may be productive of advantage; but much care and gentleness must be observed in such interference, as otherwise there would be the most obvious risk of fracturing the limb. It is considered much better for both the arms to present with the head, than for one only. In all such cases, there will be no *danger* except in a distorted pelvis; but the degree of obstruction in the latter, from the smallest addition of bulk encroaching upon a space scarcely sufficient for the head itself, may imperatively demand the assistance of instruments, as in every case where the head becomes impacted in the pelvis.

85. The variety of *possible* presentations described by some obstetric authors is enormously great, but on this point we have remarked (32). When a hand and a foot present together, we should endeavour to bring down the feet, by which we cause the hand to return ; but it may happen that we shall be able, with equal or more facility, to return the foot and hand, and make the head itself present. We think the footling practice *préférable*. When the upper part of the shoulder, back part of the neck, nape of the neck, the throat, belly, breast, or side, can be easily ascertained as presenting parts, we should, as a general rule, turn when practicable, and convert the case into a footling. A hip-presentation will gradually become a breech-case. But we have always ground for apprehension in those cases where the child lies transversely in the uterus, unless we interfere ; for if it continue long in that position, there is much danger of the case terminating fatally for both mother and child, though in some few instances, especially where there is a degree of obliquity in the position, a favourable evolution may take place. But it would be rash to place any reliance on such an occurrence where we can introduce the hand, turn, and bring down the feet, thus affording our patient an infinitely better chance of favourable labour.

FUNIS PRESENTATION.

86. Where the funis descends before the child, it is always distinguishable; and, by ascertaining whether it pulsate or not, we can determine whether the child be living or dead.* The

* Dr. H. F. Naeaglè, in his work on *Obstetric Auscultation*, to which he have elsewhere alluded, is very marked in his observations regarding the danger attending a presentation, or, properly speaking, a prolapsus of the funis. The stethoscope

funis must not be negligently permitted to remain suspended in the vagina, for the solid parts of the child afterwards coming in contact with and compressing the cord against the pelvis, may put a speedy termination to the existence of the foetus. Though it is possible for the funis to come down with a portion of the membranes, before the latter give way, and thus to be perceptible to the touch; still the common cause of the descent of the umbelical cord is a sudden rupture of the membranes attended with a rapid gush of the waters. The risk, therefore, is when such a rupture has taken place, for before it the child is in but little danger from a funis presentation. The object which the practitioner is to hold in view, in such a case, is to return the protruded funis, above the other presenting part of the child, and to keep it above until the presenting part become engaged in the pelvis. The difficulty, however, is to prevent the funis from descending again after having been returned. This difficulty is generally so great, that practitioners have taxed their invention not a little to obviate it. In the Dublin Lying-in Hospital, a very ingenious, and, we think, a successful contrivance has been adopted. A soft cord being attached to the funis, and also to an elastic catheter, the latter is so placed in the superior part of the vagina as to sup-

has often been the means of saving the child's life in such cases, by pointing out the moment when the action of the foetal heart was beginning to fail and shewing that the moment had arrived when the birth should be accelerated by the aid of the forceps. Several children were rescued from death by this method. And auscultation had prompted the having recourse to instrumental aid when the cord had been replaced, and consequently out of reach of the practitioner's finger, so that the state of its pulsation could not be ascertained by the touch; and even where no symptoms with reference to the mother indicated the necessity for any interference. this is another and most important tribute to the value of Obstetric Auscultation.

port the funis and prevent its descent. This expedient we consider far better than those we shall relate as coming from obstetrical authors. Several practitioners think a funis presentation a sufficient reason to induce them to turn the child; and, indeed, should we find a difficulty in preventing the repeated descent of the cord, turning ought without hesitation to be had recourse to: pulsation continuing and the state of the parts being favourable, we should turn; but if the cord have ceased to pulsate, it is proof that the child is dead; still we must wait for the cessation of the pain before we come to such a conclusion; for the pulsation may be imperceptible during a pain, and nevertheless return when the pain goes off. But when we have fully ascertained that the pulsation has entirely ceased, we need give ourselves no further concern about the protruded funis. The stethoscope, indeed, may be applied to confirm our opinion regarding the child's death, and if it do, the labour must be left to proceed. But when there is the least doubt in the case, the funis ought to be returned. Dr. Denman tells us that when the membranes break in the beginning of labour, and the funis descends while the os uteri is but little dilated, we must put in practice some method of replacing the funis, as otherwise the child may perish before the os uteri become sufficiently dilated to permit the introduction of the hand into the uterus for the purpose of turning. Now here is a case to which the elastic catheter is most applicable. When the os uteri has fully dilated, if the funis have descended and the child be actually dead, he properly tells the practitioner to resign the labour to the natural efforts without any further interposition; provided, there be no other cause requiring interference. But if the child be living, and the presenting part be high up in the pelvis, especially if the pains have been slow and feeble, it will, says Dr. Denman, generally be better to pass the hand into the uterus and bring down the

feet; taking at the same time the precaution of carrying up the protruded funis, that it may be out of the way of compression. If the head be too far advanced to admit of turning, we must submit to the necessity, replace the funis as well as we can, and take every precaution in our power to prevent compression of it, and secure the safety of the child by such acceleration of the birth as shall be practicable. It is to such circumstances as the last-mentioned that the elastic catheter is most suitable. In the absence of a pain, we have been advised to raise the funis as far as we can reach beyond the presenting part of the child, and keep it there until a pain succeed. But this method, unfortunately, has not always proved effectual in preventing the re-descent of the funis; and the chance of our success with it is thought to depend very much on the quantity of the funis that comes down—i. e. whether it be a single fold, or several convolutions; whether it be on the forepart or the side of the pelvis, for at the latter it can be managed more easily than at the former. Another method, therefore, has been tried, namely, instead of replacing the funis in the ordinary manner, as much more of it, as could with ease, has been brought down, enclosed in a small bag of soft leather, and which is gently drawn together, like a purse, so as to retain the entire mass of the descended part of the funis without compressing it. This bag has been placed in the uterus, and has remained there until the head of the child was expelled. But this plan has also failed. Another method adopted, was to hook the funis on some part above the head, as a leg or an arm. Dr. Waller and others suggest the introduction of a small piece of soft sponge into the vagina, passing it up into the uterus, and thereby carrying the funis up beyond the head by the gentle pressure made against it. The sponge is then to be left in the uterus together with the funis; and the idea is, that the sponge by absorbing moisture will swell to such an extent as to pre-

vent the descent of the funis until the birth of the head. Perhaps, the most feasible of the foregoing plans, after the elastic catheter without its wire, is the hooking the funis on one of the limbs above the head. It is so simple that it should always be tried when applicable. This has been recommended by Mr. Croft. But the process of turning will often be advisable, and sometimes indispensable. However, the practitioner must act according to circumstances, remembering that all his attention should be directed to guarding the umbilical cord from compression, if he neither can replace it nor turn the child. Whenever he perceives the pulsation in the funis becoming weak, the use of the forceps or the vectis, to facilitate the birth, may be his unequivocal duty; for a single minute may decide the fate of the child. Still, though those funis-presentations are very hazardous, the child is often born alive, notwithstanding them. It is said, that the more slowly at first the labour proceeds with a funis-presentation, the less the danger of compression of the cord; and consequently that in the case of a first birth there is the more chance of a fortunate issue. Doctor Collins' table suggests that the reverse is the fact. In a breech case, the occurrence is deemed more manageable than with a head presentation. In those preternatural presentations which demand turning, the funis coming down merely adds to the necessity of the process. It is said to be necessary to exclude the access of atmospheric air from the funis. This precept, however, is more easily given than observed.

MANAGEMENT IN MAL-POSITION OF THE HEAD.

87. When on the subject of examination, chap. II., we noticed the different ways in which the head may present, and also the advantage that there is in the vertex being turned to the left acetabulum. In no other position can the head ac-

commodate itself so well to the pelvis, as in this; in no other position will the bones of the cranium be so well subjected to due compression. Therefore, if on our timely examination, we discover a mal-position, while circumstances are favourable for our converting any other variety of head-presentation into this advantageous one, some advise us to proceed to do it before the head become engaged in the pelvis. If the forehead occupy the position which the vertex ought to do, and the waters still remain unevacuated, even here, where we have to make a greater revolution of the fœtus, for the adjustment, than in the other cases of mal-position of the head, the difficulty of accomplishing it cannot be very formidable in a distended uterus; but when contraction has taken place around the body of the child, the case becomes so materially altered that all our efforts may prove fruitless. We must then trust to the natural action, which unless some other untoward circumstance occur, is capable of effecting a delivery in this case. When, therefore, in our early examination the finger touches the forehead, in the spot where the vertex ought to be, we are said to be justified in rupturing the membranes, where the os uteri is sufficiently dilated, for our purpose, introducing a finger or two between the pubis and the left side of the head, near the coronal suture, or at the temple, and, if a pain come on, which it probably will do on the introduction of the fingers, we are to continue a steady pressure against the frontal or parietal region during the pain, until the necessary degree of revolution shall have taken place. Dr. Burns speaks very confidently of the general success and advantage of such a proceeding.* He says, "Even in those cases where the head

* The above, and all other remarks concerning rectifying mal-positions, should be read in connection with the note on Naegle's mechanism of parturition.

seems to be turning with the vertex toward the sacrum, I have, though it had descended so low as to have the nose on a line with the arch of the pubis, succeeded in turning the face round to the hollow of the sacrum, with great promptitude, and with so much facility that the patient did not know that I was doing more than making an ordinary examination." He also advises you to keep up the forehead during a pain, introducing two fingers for the purpose during the absence of a pain, so as to make the vertex turn round. This mode, he justly observes, is more facile of execution than depressing the occiput with the finger, and it contributes considerably more both to the revolution of the head, and to its favourable progress through the pelvis.

88. When the crown of the head presents, and the fontanelle becomes perceptible to the touch, this also may be a cause of tedious labour. We are told carefully to trace the coronal suture, in order to ascertain exactly in which direction the frontal bones lie. Having determined this point, a moment's reflection will direct us as to the steps we are to take in rectifying the mal-position. In this case, also, we are to support the forehead, as in the former one, until we find the vertex descending in a favourable manner. There may be some awkward circumstance in combination with a presentation of the crown of the head, which may render it proper for us to introduce the hand into the uterus to rectify the position of the child, or even to turn, but this will not often be requisite. It has been advised that we should employ the left hand, if, with a crown-presentation, the occiput lie toward the left acetabulum, and *vice versa*, the right. The practitioner will please himself in those matters.

89. Dr. Burns does not think that, with a presentation of the crown of the head, we often have the face directly toward either the pubis or the sacrum; he tells us that on examination we shall generally find that such supposed cases are more or

less diagonal, the vertex being to the side of the symphysis pubis. This mal-position is easily rectified, and should not be neglected. The forehead can be moved from the pubis to the sacro-iliac articulation ; and, if we attempt it at an early period, it is still easier to move the occiput to the left when it is turned to the pubis. A steady pressure of the finger against the part we want to move, during a pain, will, with a little judicious perseverance, effect our purpose. And this will be considerably less loss of time and trouble, than to have subsequently recourse to the aid of instruments, which the head becoming engaged in an awkward position in the pelvis may render necessary.

90. It is so rare for the side of the head to present, that several persons have supposed it to be impossible. But should it be recognised by our feeling the ear, it is easily rectified by the introduction of the hand ; or the child may be turned if circumstances should recommend that operation, rather than that of placing the head in the most favourable position.

91. When the occiput presents, the peculiar shape of the bone, and the adjoining nape of the neck, together with the lambdoidal suture, will render the case sufficiently manifest. We are to remember that the forehead, in this case, rests on the margin of one of the posæ muscles, which of them we can easily determine. We are here advised to raise the occiput, and give the vertex its proper position to the left. It is, however, far from being a case in which interference is so indispensable as in others ; but still, where assistance is so easily rendered, it need not be withheld. But to turn, as has by some persons been recommended in this case, is by no means requisite, unless some unpleasant complication attend the mal-position.

92. A face-presentation far more imperatively demands our aid, as it is one not only likely to prove tedious, but may like-

wise cause considerable injury to the child's features. In this case there will generally be found some degree of obliquity, the chin being turned toward one of the acetabula, in the majority of such cases to the right. The forehead commonly is on a lower level than the chin. If this presentation be suffered to proceed for any time, the upper part of the cheek comes down, and the zygoma as well as the side of the nose will be found presenting. The chin in this presentation has a tendency to turn more forward, while the forehead moves into the hollow of the sacrum, and the lower portion of the cheek then becomes the presenting part. If left to its own procedure, the chin, after turning quite round, will pass under the arch of the pubis, leaving the latter to embrace the throat. The cranium, at the line of the sagital suture, is in the mean time passing along the hollow of the sacrum, until it become engaged with the perinæum, which it may lacerate; but the features of the child which are chiefly exposed to risk, and their peculiar position, must always be borne in mind, when we have occasion to use instruments, as they (the features) are to be found at the pubis, and consequently are awkwardly situated for the application of an instrument, and even cautiously to be approached in a manual examination. This would be a cause of tedious delivery, though nature may be equal to effecting it unaided; but there is a chance of the child dying from pressure of the jugular veins against the pubis. A face-presentation is regarded as a proper case for turning the child, if discovered in time, more especially if it be considered desirable to expedite the delivery from the state of the patient. But when turning becomes difficult, from the advanced state of uterine contraction, &c., we are directed to endeavour to rectify the mal-position of the head, by raising the forehead, and giving the vertex its proper position to the left, and then suffering it gradually to become depressed. Even when the labour has

advanced so considerably as to render this not altogether practicable, we are advised to afford all the aid in our power, by depressing the vertex with the finger, and taking every opportunity of pressing up the forehead with the thumb. If we employ the vectis under such circumstances, we must do so with great caution. When the chin turns forward to the pubis, we may in some degree aid it, by pressing it gently forward under the arch. But nothing must be done rashly while the face is in contact with the pubis; and our interference will be scarcely admissable, unless when it would appear to be least indispensable, namely, when the relative capacity to the size of the head is ample. The support of the perinæum will, in all such cases, call for our vigilant attention, as the vertex presses very severely upon it, and we must be prepared, therefore, to give the case more time. After the birth of the child, the swollen state of his features may demand our attention. As to facilitating the birth, aid can sometimes be rendered, in a face-presentation, better with one blade of the forceps than with the two, or even than with the more bulky vectis.

93. When the chin is turned toward one of the sacro-iliac articulations, and we find the forehead moving obliquely backward, while the chin comes forward, and threatens us with acquiring the position last described, we are told by Dr. Burns that it is a case of less difficulty when the chin is disposed to turn round to the pubis, than when it turns to the sacrum. He says, "It is easier for the forehead to turn down at the arch [of the pubis], than for the chin [when prominent, of course], to descend behind, and we find that it may move up more, along the hollow of the sacrum, and in the same proportion the forehead revolves backward, and the vertex comes down, and passes under the arch." When the chin is disposed to turn forward to the pubis, he therefore advises us, if we interfere at all, to assist it in so turning; while, if it turn to the sacrum,

we are to press the chin up, and endeavour to bring the vertex down.

94. When the chin is directed either to the pubis or the sacrum, with the long diameter of the face corresponding with the conjugate diameter of the pelvis, we are, at an early period, to change it to the natural position ; or aid by turning the forehead more to one side.

CHAPTER V.

DISTORTION OF THE PELVIS.

95. This, when it prevails to a considerable extent, is necessarily the most formidable obstacle which parturition has to contend with. It is not invariably the case that women who have suffered under spinal complaints have distorted pelves, though we too often have reason to apprehend it under such circumstances. And one of the most serious impediments to delivery, namely, an immoderate projection of the promontory of the sacrum, i. e. the last (5th) lumbar vertebra, has been attributed to the baneful practice of tightly lacing young girls, especially when they have any tendency to molities ossium, or rachitis. The pelvic distortion may exist in a variety of forms, but it is when the internal capacity of the pelvis is diminished, rather than when we have merely to complain of its being awry, that it becomes a source of peculiar solicitude. The most usual place of distortion is at the superior aperture of the pelvis ; and a lateral distortion is more rare, if, indeed, it ever occur, which is denied. The projection of the promontory of

the sacrum, however, is too frequent in its occurrence in these countries; perhaps more so among ladies in fashionable life than among the humbler classes, from the cause we have adverted to. The ossa pubis may become still more generally distorted as a consequence of molities ossium, or rachitis. Where disease attacks the sacrum, and causes it to lose its proper concave form and to become flat, it may in some measure be a cause of tedious labour, but cannot be regarded as a formidable obstacle to delivery, unless the fœtal head happen to be of a disproportionate size, or unless attended with other distortion or contraction of the pelvis. It is necessary for the practitioner to bear in memory, that a proper pelvis ought to exceed four inches at the narrowest part of its superior aperture. But this has by disease been reduced to *one*, leaving no chance for delivery of a living child except by the Cæsarean operation, and, indeed, but little prospect of our being able to bring away even a mutilated fœtus, if full-grown, *per vaginam*. Besides this projection forward of the lower part of the spine, there may take place a disease or excrescence of the bone, called exostosis, leaving an osseous protuberance at some part of the sacrum or lower lumbar vertebræ. This would present as decided an obstacle to the progress of the fœtal head as any other. Yet it is astonishing what obstacles the process of parturition has occasionally overcome in contracted pelves. Sometimes the child's cranium has been found to suffer a considerable depression from the projecting promontory of the sacrum, and nevertheless it has in a short time after birth recovered its proper convexity, and the child done well. The os coccyx, also, may become ossified throughout its articulations, having formed an anchylosis with the inferior bone of the sacrum. This would produce tedious labour, but is by no means to be compared with a considerable projection of the "promontory" as an impediment. Distortion of the tuberosities and spinous

processes of the ischia may likewise result from disease of the bones; and the proper form of the arch of the pubis may be destroyed by a similar cause. We are led to anticipate much more of pelvic distortion when spinal disease occurs in early life, than at a more advanced period. But what the practitioner has most concern with is the actual state of the pelvis, as evidenced by an examination *per vaginam*. He is to remark the degree of prominency in the sacrum, and whether or not there be any formidable distortion of the lower bones or aperture of the pelvis. As to a naturally small though not distorted pelvis, we can form some idea of it by the slight projection of the hips. But this is not always to discourage us, though it ought to make us the more solicitous to remove every impediment in the form of mal-presentation, &c., than we should be if the pelvis had ample capaciousness. Dr. Denman says that deformity of the pelvis with child-bearing women has been found to increase gradually in every succeeding labour.

96. There is more difficulty in surmounting the deformity of the superior part of the pelvis, in parturitions, than that of the lower part. In many of those cases, delivery in the natural way would be impossible were it not for the surprising changes sometimes accomplished, during a tedious labour, in the child's cranium, when ossification has not advanced too far to admit of a yielding and over-lapping of the bones at the sutures. It, therefore, becomes an object with the practitioner sometimes to bring on premature labour, so early as the seventh month of pregnancy, when he is aware of his patient having a distorted pelvis. For thus the cranium will be found remarkably yielding, as well as smaller. It is, however, impossible to lay down what ought to be the practitioner's conduct in every case, as this must vary according to circumstances, from the employing of safe manual or instrumental aid, up to the sacrifice of the child to save the mother, or even delivering by the Cæsærean

operation. The division of the symphysis pubis was at one time in vogue in cases of difficult labour, but it has very generally been consigned to neglect, as affording scarcely any advantage. As to the practical course to be adopted in cases of distorted pelves, any directions relative thereto will come chiefly under those rules regarding the use of instruments, Cæsarean operation, &c. We shall here merely premise that wherever the case is not manifestly one altogether desperate, we are to place as much reliance as we reasonably can on the modifying power which the pelvis has been known successfully to exert on the foetal cranium, more especially when we find the action of the uterus vigorous, and the patient's strength unimpaired. But common sense will usually give us timely warning, when we ought to have recourse to artificial aid and powerful measures. Of these we shall treat in their proper places.

97. It is unfortunate that in making an examination *per vaginam*, during labour, we have not the means of readily ascertaining the state of the promontory of the sacrum, the finger cannot reach anything near so high as its situation. But when we find that the head of the child does not enter at all into the brim of the pelvis, we have too much reason to fear that there is a deformed sacrum. As to the other parts of the pelvis, we may in a good measure test their deformity. By the number of fingers we can introduce into the pelvis, and the distance to which our fingers can be separated from each other without reaching or touching its opposite points, we learn to estimate the capacity of the pelvis, as far as it is accessible, with sufficient accuracy for practical purposes. However, if we make an examination when the bladder is empty, our finger may reach to the upper end of the pubis, and ascertain the condition of its arch, so important a part in parturition. It does appear, therefore, that the intelligent examiner, who has rendered himself conversant with the preparations of distorted pelves, can, by

manual examination, form a sufficiently accurate judgment to direct his proceedings; but written instructions can never prove a substitute for experience in this matter.

OBSTRUCTIONS IN THE SOFT PARTS.

98. It is not alone in the bones that we are to expect obstructions to the passage of the child, for both the os uteri and the vagina may become the seat of tumours; and the latter may be so occupied with cicatrices and adhesions, as to present the most distressing obstacles to delivery. This is a state readily discoverable on examination, and will demand our aid in many cases, though in some instances the adhesions and cicatrices may of themselves yield to the excluding force. In the chapter on Occlusion of the Uterus and Vagina a principal part of this subject has received special consideration. Dr. Denman mentions a case of profuse hæmorrhage which occurred in one of his patients, in the eight month of pregnancy, from a large fleshy tumour attached to the os uteri, which at first was mistaken for the placenta. The woman died undelivered, and, on a post-mortem examination, they made an incision in each side of the cervix uteri to the vagina, and found a large "cauliflower excrescence" growing to the whole anterior part of the os uteri, and the placenta adherent to its entire surface. This certainly was a very rare case, but tumours and excrescences of a smaller size are occasionally met with in practice, chiefly in women of advanced age, and with a schirrous disposition of the parts of generation. In general, such moderate obstacles are overcome by the natural efforts, though they render the labour more tedious and distressing, and as they frequently become lacerated, some degree of hæmorrhage may take place, yet not to an extent sufficient to excite serious apprehension. Cicatrices of the vagina must be the consequences of former injuries

sustained, probably during parturition, and neglected at the time, so that the raw surfaces were permitted to remain in injudicious contact, causing contractions of the vagina. Or they may proceed from any species of vaginal inflammation, suffered to run into ulceration, and to form adhesions. The extent of this adhesion, as we have elsewhere noticed, may be such as to render the vagina almost or entirely impervious, and it may demand a surgical operation before the slightest hope of delivery could be entertained. This would imply strange neglect on the part of the woman, to give timely information, and fortunately such extreme cases are very rarely met with. I have, however, witnessed such vaginal obstructions, in my practice, as greatly added to the tediousness and anguish of the labour, and forced the patient to try various changes of position to facilitate the passage of the child. Time and patience succeeded, nevertheless, without the unpleasant necessity of making incisions; but cases have occurred where the latter became necessary. In a great majority of cases, it is true, few adhesions, if they be in a longitudinal direction, will withstand the persistent pressure of the child's head with ordinary uterine action; but we never should trust transverse productions of inflammation to such means, as they are liable to produce extensive lacerations, and should therefore be partially divided (98). The practitioner must not overlook this circumstance, as very serious consequences have ensued from the head being allowed to reach those transverse bands in the vagina before the incisions were made; but the incisions need not be deep, as the head will be sure to distend them sufficiently, however slight. However, a most important decision is, not to neglect the necessary dressings and subsequent treatment after the delivery as pointed out elsewhere. Some practitioners have adopted tents of lint, as bougies, to be worn in the vagina during the process of healing, so as to prevent contractions. Having, un-

der the proper head, laid down a mode of treatment that can readily be had recourse to, it is unnecessary here to add more on the subject. We have also said sufficient concerning the necessity, in using the knife, *in vagina*, of strictly bearing in mind the relations of the bladder and rectum with the vagina. Polypus excrescences, sometimes of considerable magnitude, have grown within the uterus. It is not common for these to be so formidable as to resist the progress of the head altogether, though they may impede it for a while. But, in the event of their becoming an insurmountable obstacle, it becomes a case in which few practitioners would like to act upon individual responsibility, where professional consultation can be obtained. The ovaria have been found schirrous, or dropsical, and so augmented in bulk as to present "a large and firm tumour lying between the rectum and vagina, filling up all the concavity of the sacrum," and thus obstructing delivery in an embarrassing manner. In one case of this kind, a trocar was passed into the tumour from the posterior part of the vagina, and, a large quantity of water being thereby discharged, the tumour subsided, and the child was born alive; but the complaint afterwards proved fatal to the mother. The majority of those dropsical tumours, however, are found to yield to pressure, and, after a while, permit the passage of the foetal head. Fleishy tumours, in such situations, and of such size as to become serious obstacles, may occur; but I am not aware that it has ever been found absolutely necessary to extirpate them by the knife during labour, though they have become the subject of operation at other times. But to enter into a minute consideration of those numerous and comparatively rare lesions would be foreign from the design of this work, and lead to discussions better suited to a treatise on surgery. Suffice it, then, for obstetrical purposes to say, that tumours seldom become a very formidable obstacle to parturition, as they most commonly yield,

after some delay, to the pressure of the head. When they do not, they, of course, must be either punctured or opened, and will be the object of surgical treatment after delivery. In all excrescences of the vagina, the use of delivering instruments demands the greatest possible precaution.

CHAPTER VI.

RETENTION OF THE PLACENTA.

99. Until the delivery of the placenta, and the cessation of the hæmorrhage that almost invariably follows it in a greater or lesser degree, we can never consider our patient out of danger, nor take our departure from her bedside. The only effectual remedy for hæmorrhage from the internal surface of the uterus, we have repeatedly said, is uterine contraction of the first species, when the entire uterine substance is engaged in it. But let us first speak of the placenta as connected with this point. The detachment of the placenta, or even its passage into the vagina, without such contraction of the uterus taking place and continuing permanent, will afford us no security, but, on the contrary, rather add to the hæmorrhage. Our whole treatment, therefore, is directed to the purpose of inducing this contraction; and when we do proceed to detach the placenta we should never remove either it or the hand until we perceive contraction taking place in the uterine fibres. This is a general rule invariably to be observed. The placenta is not always of an uniform size, nor does it constantly become affixed to the same part of the uterine surface. It usually, however, extends over

about a fourth part of the outside of the shell or ovum, and is somewhat more than an inch thick about its centre, diminishing gradually in thickness toward its edge, and putting one in mind of a large, flattish mushroom. The funis is not always inserted in the very centre of the placenta; and sometimes the vessels which compose its internal or foetal surface, and which, proceeding from the funis, ramify on that surface, are not so firmly combined therewith as to resist our bearing upon the cord, for at times they can be dragged and detached from the placental surface by a moderate degree of force. This should make us cautious how we lend a heavy hand to the funis, as a means of aiding the detachment of the placenta. But indeed there is a far more influential reason for abstaining from any but the very gentlest tractive efforts with the funis than the danger of detaching it from the placenta while the latter remains in the uterus. The latter incident, though it deprive us of some assistance and guidance in the introduction of the hand to the place where the placenta is situated, and render the external pressure of an assistant's hand necessary to steady the uterus while we proceed to detach the placenta, is of no importance when compared with the risk we run of causing an inversion of the uterus when we add to the uterine action a strain upon the funis. We have said, that after the child has been born, we ought to promote uterine contraction, as the means of expelling the placenta, and that, with this design, grasping the uterus with an extended hand or hands, especially about the region of the fundus, maintaining pressure upon it, moving the abdominal parietes, so as to cause the stimulus of irritation, making our hand cool by dipping it in cold water, or even pouring cold water on the hypogastrium, or applying cloths moistened therewith to the uterine region, should be had recourse to, unless we feel the uterus contracting into a hard ball under our hand. In the majority of favourable cases, a slight return of the expelling pains

occurs, in from ten to twenty minutes after the birth of the child, and the placenta is expelled into the vagina. But this is not uniformly the case, for I have attended patients who assured me that they never were sensible of the slightest return of the pains when the placenta came away ; so that in the latter case the gradual shrinking of the uterine fibres, or what (80) has been described as the first of the three species of uterine contraction, must have brought about the expulsion. But, as we said above, there most commonly is a slight renewal of the labour pains at this period. Nevertheless, even a species of uterine contraction, namely, the third, irregular or spasmodic species (80), may occasion, not the expulsion, but even the retention of the placenta. Whether the circular fibres of the cervix uteri be the seat of this partial contraction, and thus prevent the descent of the placenta, even though detached ; or the irregular contraction take place in the centre or body of the uterus, dividing the organ into two cavities—i. e. the “ hour-glass contraction”—the passage of the placenta into the vagina will be equally prevented. Now those contractions of the spasmodic kind, though enough to imprison the placenta, by no means suffice to put a stop to hæmorrhage, whatever their effect may be in causing a partial detachment of the placenta ; for to secure the uterus from flooding a general uterine contraction of the first species (80), seems to be indispensable. It is supposed that the augmented thickness which takes place in the substance of the gravid uterus, during gestation, and notwithstanding that distending process, from which one would at first look for a diminution instead of an increase of thickness in the uterine walls, is owing to an enlargement in the calibre of the vessels of the uterus. This seems really to be the case ; and we therefore must look to the diminution of that calibre, the result of the uniform shrinking among the uterine fibres, as the only means of arresting hæmorrhage from the vessels now left

with their mouths exposed by the detachment of the placenta and membranes, partial or entire. There can be, therefore, under such considerations, no doubt as to what our mode of proceeding should be. It is allowable, indeed, to give a very gentle stimulus to the uterus, by slightly touching (we will not say *pulling*) the funis. But it is almost wrong even to give such a licence, lest it be abused. Perhaps all that should be done by the practitioner is to pass up his fingers along the cord, to try whether the placenta be detached and lying at the lower part of the uterus. However, if the placenta do not descend by the most moderate action in that way, in other words, if we do not feel it readily yielding, we are to abstain from any bearing upon the funis. If there be no uterine hæmorrhage to excite alarm for the safety of the patient, we are not to be in a great hurry to proceed to the manual extraction of the placenta. Dr. Collins is of opinion that we are justified in waiting two hours for the expulsion of the placenta, after the birth of the child, unless there be hæmorrhage. Some interval of repose should at all events be given to the patient, particularly if she be jaded, before we proceed to manual extraction. For it may so happen that she is so far exhausted by her exertions as to render nature incapable of effecting the necessary tonic contraction of the uterus, which is so indispensable an accompaniment to the detachment of the after birth. In such case, the administration of some temperate cordial will be proper. When, however, a considerable period has elapsed without expulsion of the placenta, we must not forget that it may be detained by irregular contraction, and that indefinite delay is inadmissible. We should, in such case, introduce the hand into the uterus, for the purpose of exciting such contraction as will authorise our bringing the placenta away. If uterine hæmorrhage occur, however, no delay is justifiable, for we cannot tell to what that hæmorrhage may lead if not promptly checked. (See the ob-

servations on uterine hæmorrhage.) We pass up our hand, using the funis as our guide, and steadying the uterus by maintaining a moderate degree of tension on the umbilical cord with the other hand. If we find spasmodic contraction of the cervix uteri to prevail, we bring our fingers into a conical form, and patiently proceed to dilate the cervix, until we have completely overcome its irregular contraction. This is by no means to be done in a hasty or violent manner, but as it were by wearing-out the irregular action, lest when we have passed the hand higher into the uterus we find the irregular action return, and the cervix contract firmly on our wrist. If the irregular ("hour-glass contraction") be at the body or central part of the uterus, we are to dilate this part with equal patience by gradually separating our fingers. When we reach the placenta, which usually, though not always, is toward the posterior wall,* we should

* Though much variety of opinion has prevailed with respect to the most usual position of the placenta, and for the most intelligible reason imaginable, namely, because that position is subject to much variety, still we hesitate not to declare our opinion to be that it is much more frequently attached to the posterior wall of the uterus, and somewhat below the orifice of the fallopian tubes, than in any other part of the uterus. Doctor Burns considers the fundus uteri to be the most common place of the placenta; but in this opinion the learned Doctor must be mistaken. Dr. Richard Doherty of this city has given a very valuable table in the March number of the *Dublin Journal of Medical Science* for the present year, in which the positions of the placenta are described in 100 cases. The following is the result of this tabular arrangement:—"Out of those one hundred cases, in 25 the placenta was attached to the anterior wall; in 8 to the right side below the fallopian tubes; in 10 to the left side, below the tubes; in 3 to the fundus; in 54 to the posterior wall; and of these only 27 came within two inches of the lower part of the cyst." From Dr. Naegle's observations we should be led to expect the placental position be more lateral; but facts must always decide the point against theory, however plausible.

at first try the effect of pressing its internal surface with the hand, unless it be detached, which sometimes happens in those spasmodic contractions. Such pressure often suffices to awaken the action of the uterus so as to make it contract upon and detach the placenta. But, whether it do or not, the hand is by no means to be precipitately withdrawn after the placenta has been laid hold of; on the contrary, we are to wait for uterine contraction to be so distinctly established as that the hand itself shall experience the expulsive efforts of the organ. These we shall promote by gently tapping with our knuckles or the backs of our fingers against the uterine walls; and when we find the contraction becoming general, we are slowly, and with an almost circular motion, to bring down the placenta in our hand, and leave the former in the vagina. If such an atony of the uterus should occur as to demand other artificial means for exciting its action, the following are the means recommended, in addition to those previously mentioned:—A little peppermint, or cinnamon-water to be administered, or camomile tea,—or a little warm wine; or friction on the uterine region with the volatile liniment. The celebrated French obstetrician, Madame Chapelle, has advised us to press with the palm of the hand against the inferior part of the labia and perinæum, as a means of exciting the uterus to contract. The tincture of cinnamon, the spirit of sulphuric æther, the spiritus ammoniæ succinatus, the Ergot of rye, are thought to possess considerable powers in promoting uterine action. The ergot appears to be the least likely to disappoint; but Dr. Rigby cautions us against letting it be exposed, in keeping to either cold, air, or light. He thinks the powdered Ergot more efficacious when given in cold than infused in boiling water. The tincture of Ergot he entirely repudiates.

100. But sometimes the placenta is retained, not by spasmodic contraction of the uterus, but by partial adhesion of the

placenta itself, often of a cartilaginous nature. Where this is the case, and the placenta does not come away by the pressure we have just recommended, to be tried in the first instance, we must proceed to detach it, by slowly and cautiously introducing our fingers* between the surface of the placenta and that of the uterus. It will commonly separate, or "peel off" without difficulty; and we must refrain from any rough method of proceeding, for fear of causing irritation, or even inflammation in the uterine substance. There have cases occurred where a portion of the placenta has adhered so firmly and obstinately, as to defy any justifiable efforts that could be made to detach the entire body. In such a case, it certainly would be preferable to tear the placenta itself, and thus to bring away as much of it as we could without doing violence to the uterine surface. This is a necessity we may possibly have to submit to, trusting that the portion so left shall be ere long expelled. In case of a part of the placenta being thus retained, we have been advised to inject the uterus frequently with warm water,

*As sometimes there may be a difficulty in finding any part of the edge of the placenta free, it presenting to the finger the appearance of a continuous surface with the walls of the uterus, the insinuation of the fingers, in such case, between the external or convex surface of the placenta and the lining membrane of the uterus, for the purpose of gently promoting the "peeling" process, may be rather perplexing, and no violence, or *pulling* of the internal surface of the placenta should ever be had recourse to. In the event of this difficulty presenting itself, we are advised to extend the fingers of the introduced hand flatly over the level or free surface of the placenta, and, carefully and with gentleness, to gather or contract the placenta by pressure from its margin inwards. If this operation be properly performed, portions of the placental edge which before appeared to be continuous with the uterine surface will become gradually disengaged and present points for the introduction of the tops of the fingers, so as to enable us to commence the peeling process with tenderness and effect.

infusion of camomile flowers, or a weak solution of chloride of lime ; or, subsequently, should the state of the uterus require it, to have recourse to injections of a strong decoction of oak-bark. Purgatives and other judicious medical treatment may be called for in such cases. In bringing down the membranes, we are to be slow and cautious in the process, taking care to remove with them all coagula to be found in the uterus. As coagula are the common causes of "after pains," they should invariably be removed. It may be well to mention that while we are striving with our fingers in the uterus to dilate its partial contractions, the application, externally, of a cloth wetted with cold water to the uterine region tends to allay spasm, and seems at the same time to promote the general contraction of the organ. The removal of the placenta in case of adhesion requires both patience and circumspection. We should try the effect of gentle rubbing, and of curling-up the non-adherent portion, rather than attempt to pull it away. Any portions remaining adhesive to the uterus, after we have carefully broken away with our fingers the non-adherent parts of the mass, are usually discharged, in a state approaching to putridity, in two or three days.

101. We have said that when the practitioner abstracts the placenta from the uterus, he is to leave it in the vagina. We are, however, quite aware that many persons consider this an unnecessary precaution, and prefer removing the entire after-birth through the os externum when they withdraw the hand. But the most judicious professors of the obstetric art, on mature consideration of the question, have arrived at the conclusion that the placenta should be left to be expelled from the vagina by uterine contraction, which its presence appears to promote. Thus we shall be more satisfactorily assured of the process taking place to which alone we can look for a security from uterine hæmorrhage. For the expulsion of the placenta

spontaneously is evidence that the uterus has contracted, and therefore is calculated to allay our apprehensions on this score. But there are other reasons for our not instantly removing the placenta: 1st, it acts as a "plug," which every writer on the art recommends as among the safe auxiliary means of correcting hæmorrhage; 2ndly, as a certain degree of hæmorrhage almost necessarily follows the removal or even the spontaneous expulsion of the placenta from the uterus, we thus afford opportunity for the placenta and its appendages to collect the products of that hæmorrhage together, preventing their escape through the vaginal orifice, and enabling us, when the placenta, after an interval more or less protracted, shall have come away, to complete the comfort and cleanliness of our patient at once; and, 3rdly, by the placenta thus remaining in the vagina, we contribute to prevent the access of atmospheric air to the cavity of the uterus, until that cavity shall have been obliterated by contraction. Perhaps these reasons may not satisfy all persons whose opinions we respect. We shall therefore merely quote the words of Dr. Denman, viz. :—" It (the placenta) should be suffered to remain there (in the vagina) till it is excluded by the pains." p. 210.

102. As soon as the placenta arrives in the vagina, whether artificially or spontaneously, we are to grasp the fundus uteri with our hand, to ascertain if it be contracting and descending satisfactorily. We then follow it down to the pelvis, as directed (10), and secure it there by the compress and binder. But should we have reason to be dissatisfied with the state of the contraction, and not feel, through the abdominal parietes, the uterus forming itself into a hard ball, we must in such case not quit the patient until we have tried the methods before recommended to induce such contraction, such as pressing or rubbing the abdominal integuments, application of a cold hand, or a cold wet cloth thereto, &c. When, however, we are satis-

fied that all is proceeding as it ought, after having adjusted the binder, and given directions about our patient's comfort, as well as administered to her either a mild cordial, or such other refreshment as circumstances may indicate, or her wishes call for, we may leave her to tranquillity and repose.

CHAPTER VII.

UTERINE HÆMORRHAGE.

103. This alarming occurrence may take place at almost any period previous to or during the regular course of labour; it will therefore be more proper, with a practical view, to treat of it here, than after we have spoken of the less frequent irregularities of parturition. Uterine hæmorrhage has been divided by systematic writers into four orders or species, bringing before the practitioner all the occasions on which he is likely to meet with this calamity; namely, 1. That which takes place in the early months of pregnancy, or abortion—generally regarded as limited to the first six months of utero-gestation. 2. Hæmorrhage happening from the commencement of the seventh month to the regular period of parturition. 3. That which occurs between the birth of the child, and the expulsion of the placenta. 4. That following the removal or expulsion of the placenta. Another highly practical division of hæmorrhage is into “unavoidable” and “accidental.” The unavoidable arises from attachment of the placenta at the os uteri, technically styled “placenta prævia.” This species admits of no relief from palliatives, for nothing short of delivery will be of the slightest use in it. The action of the uterus is invariably accompanied with a gush of blood in this kind of

UNAVOIDABLE HÆMORRHAGE.

hæmorrhage, and it fully authorises a promptness in delivery which the other, that is to say the accidental hæmorrhage, may not call for. The latter proceeds from partial detachment of the placenta, &c., in other parts of the uterus, and may be checked by the means to be hereafter described without always rendering it incumbent on us to have recourse to immediate delivery. The practical importance, therefore, of this distinction is sufficiently obvious. As the first variety in the four-fold division of uterine hæmorrhage can be more regularly considered under the head of "Abortion," we shall defer our special remarks on it 'till we come to treat of that casualty. The other three species being liable to occur to the practitioner in what may be termed the more regular course of his occupation, we shall here make it the particular subject of notice.

104. But it will be fitting in the first instance to offer some remarks applicable to all the species of uterine hæmorrhage—if we may not except the "unavoidable," which, as we have observed, can receive benefit from nothing but prompt delivery. The flow of blood from the vessels of the uterus takes place in consequence of the mouths of those vessels having become denuded by the separation of the membranes or placenta from the internal surface of the uterus before the uterine contraction has diminished the extraordinary state of distention which the uterine vessels acquire in pregnancy. These vessels are of two kinds, viz. arteries and veins. The former being capable of lessening their calibre by a contractile power with which their coats are endowed in an incalculably greater degree than the veins possess—if the latter have any contractile power—hæmorrhage from the arteries is, theoretically, viewed as far less formidable than hæmorrhage from the uterine veins. For there are two modes in which hæmorrhage from the uterus is moderated, or restrained. The first is by the

contraction of the mouths of the vessels, which, in the uterus as well as in all other parts of the body, leads to the formation of coagula, and this is found to take place in fainting, by which the afflux of blood is, for the time being, greatly diminished, and the circulation in the part rendered remarkably slow. Thus has nature, by a happy arrangement, so ordered it that the very exhaustion, which is a consequence of the hæmorrhage, should contribute to the removal of the evil. And here the practitioner receives a useful caution, namely, not to be too ready, in fainting from uterine hæmorrhage, to remove that state of insensibility before the coagula have time to form in and plug-up the mouths of the vessels. But this consideration would not authorise him to let suspended animation continue to a perilous length of time, lest the vital spark should become altogether extinguished. The other and most trust-worthy method by which nature suppresses uterine flooding is that to which we have so repeatedly alluded, the universal contraction of the uterine substance, necessarily involving that of the vessels themselves. It is also alleged as an unquestionable fact, that, during fainting, or even sleep, the universal contraction of the uterine substance goes on with unceasing efficacy, at the same time that the coagula are forming in the mouths of the vessels. This is what we ought on reflexion to expect, as the intrinsic contraction of the uterine fibres under such circumstances meets with less opposition; while at the same time the supply of blood is less to keep up hæmorrhage. But after a reasonable time has been afforded to produce the desired effect—that of the formation of the coagula—then the judicious administration of suitable stimuli may tend to the augmentation of uterine contraction. Of this we shall speak in the sequel.

105. A good deal of judgment is often required to determine what measures we ought to adopt in uterine hæmorrhage.

We are to consider what is the habitual temperament of the patient, in the first place. If she be of a sanguine temperament, and of vigorous vascular action, and especially, if before the accession of the hæmorrhage she had been heated and febrile, we may find it advantageous to diminish the force of the general circulation by a suitable bleeding, and also to exhibit medicines capable of aiding this operation. Nitrate of potash, with or without small effervescent saline draughts, is found to assist this intention by cooling-down the system, and determining to the cutaneous surface. The acids, both mineral and vegetable, are also considered restrainers of hæmorrhage. The compound infusion of roses, with the addition of alum, the superacetate of lead, or the sulphate of zinc, Dr. Denman recommends as affording hope of success. Acidulous fruits may be usefully given from time to time. Cooling diaphoretics have a tendency to equalize the circulation, and therefore to correct the too great determination to one part. Dr. Copland regards ipecacuanha, in small doses, or even in free and frequent doses, as very serviceable in this respect. He also speaks favourably of hyoseyamus, and nitre, with small doses of camphor in combination with the ipecacuanha. To remove constipation, no irritating cathartics must be given. The tartrate of potash, or the tartrate of potash and soda, tamarinds, or bitartrate of potash with the confection of senna, or any cooling laxatives will be a proper kind of aperients for this purpose. In the way of derivatives, warm manuluvia, and cupping glasses applied to the mammæ have sometimes been adopted. Dry cupping over the loins or sacrum has also been considered worthy of trial. These are suitable to a rather active state of the hæmorrhage; but if it have passed into a passive state, there must be a change of treatment, the strictly refrigerating and somewhat depressing system ceasing to be applicable. Tonics and astringents then become more appro-

priate. Wendelstatt recommends to our notice the preparations of catechu combined with opium, the muriated tincture of iron, the terebinthinates and balsams, the superacetate of lead and opium, alum and the metallic sulphates, as not inappropriate to the passive state of hæmorrhage. It is in this state, too, that the Ergot of Rye is deemed most useful. Where the female is delicate and nervous, Dr. Copland advises us to give camphor with nitrate of potash and opium or hyoseyamus in conserve of roses, Dover's powder with catechu, the infusion of roses with sulphuric acid and anodynes, the balsam of Peru, or of Tolu, in the form of pills, with magnesia, or powdered rhubarb, or with oxyde of zinc, and small doses of opium, according to the peculiarities of the case. Oil of turpentine has been administered in uterine hæmorrhage; but Dr. Denman thought it more suitable in prolonged cases, than where the flooding is sudden, profuse, and threatening immediate danger. Digitalis has naturally been looked to as an appropriate medicine in this complaint, and its well-known power in lowering the pulse and diminishing the action of the heart seems a sufficient warrant for our adopting it in high vascular action, where less Herculean medicines have failed. But coolness, quietude in the recumbent posture, the application of cloths wet with vinegar and cold water to the loins and abdomen, tops of the thighs and vulva, and changing them whenever they become warm, or even applying powdered ice in a bladder, and suffering it to dissolve on those regions may be necessary, where the hæmorrhage is profuse. Some professors have recommended, and others have been unwilling to incur the responsibility of administering enemata of very cold water. Dr. Copland apprehends danger from the incautious use of cold in local applications. He says, "They are not always appropriate in the passive states of the disease, and they are serviceable chiefly when the active form has become excessive

or dangerous. Yet," he adds, "I have seen recourse to them fail, in some instances, and productive of injury, in others. If resorted to prematurely, they may be followed by inflammatory action in the uterus, peritonæum, &c., or by severe rheumatic attacks, I have, therefore, (he adds) had recourse, in extreme or prolonged cases, to the spirits of turpentine, either in a draught, or in an enema, or in the form of epithem or fomentation over the hypogastrium, and always with success." If the compression of the abdominal aorta, of which we shall presently treat, be of the efficacy asserted by its distinguished inventor, we are hereby presented with a controlling power over uterine hæmorrhage which will supercede every objectionable measure. But, in a disease so formidable, it will be expected of us to detail almost every remedy pointed out by authority. The combination of prussic acid and digitalis in small doses, administered in cinnamon-water, according to a formula given in the appendix, has a very marked effect both in tranquillizing the mind and allaying the increased action of the heart; we therefore recommend it to notice as an obstetrical medicine, and as suitable in uterine hæmorrhage. Plugging the vagina should not be neglected, as it is thought to have much efficacy in abating hæmorrhage, many professors have directed this to be done with linen cloth; but Dr. Dewees and the present Professor Rigby give a decided preference to a piece of soft sponge wrung out of vinegar. The plug is peculiarly applicable to hæmorrhage that occurs before the os uteri has sufficiently dilated for the introduction of the hand and artificial delivery. While it promotes coagula and checks hæmorrhage, it is considered productive of dilatation of the uterine orifice, and thus auxiliary to the application of the only definite remedy. It is not, however, to be blindly relied upon, or unwatched.

HÆMORRHAGE WITHIN THE LAST THREE MONTHS OF PREGNANCY.

106. This includes the cases to the special consideration of which the remainder of the present chapter is to be particularly devoted. But to all and every species of uterine hæmorrhage the general observations above made have more or less reference. The first species we shall here treat of is that attending Placenta prævia, that is to say the "unavoidable hæmorrhage," proceeding from a mal-position of the placenta over the os uteri. In this case the hæmorrhage is really "unavoidable," that is to say, it is inevitable, and cannot be palliated; for in proportion to the progress of dilatation or uterine action does the flow of blood increase, the placenta becoming more and more detached, and contraction of the especial source of the hæmorrhage being incompatible with the dilatation of the os uteri. We ascertain this condition of the placenta by perceiving, on making an examination *per vaginam*, a *fleshy* substance pressing forward instead of the membranes. We also perhaps have sufficient reason to infer it, when gushes of hæmorrhage accompany the pains. This cause of hæmorrhage is necessarily considered more formidable than where the flooding is attributable to partial and premature detachment of the placenta, &c., in other parts of the uterus; and it has caused some variety of practice with regard to the mode of affording assistance. It should be remembered that the more advanced the stage of utero-gestation the larger are the uterine vessels, and the more copious the hæmorrhage we are consequently to expect from a given portion of the internal surface of the uterus becoming denuded. It is for this reason that the practitioner must be so decisive in his measures in the last months of pregnancy.

107. Where the PLACENTA IS PLACED OVER THE OS UTERI we have but little danger to apprehend until some dilatation of the latter, for 'till then the hæmorrhage can scarcely become copious. It is one advantage, however, that we cannot be blind to the progress of the danger in placenta prævia, as we may for a time be in the more *internal* flooding of the uterus. Where we discover a *slight* hæmorrhage with the mal-position of the placenta perceptible, but with the os uteri manifestly unfit for an introduction of the hand, our first measure appears to be the plugging up the vagina, and we are disposed to prefer the sponge wrung out of vinegar for that purpose. But placenta prævia is a case in which even Dr. Collins, with all his objection to meddling with the os uteri for the purpose of artificially dilating it, admits that at times we may be called upon to depart from the general rule, and make every reasonable effort to promote the dilatation. It is, therefore, only when it obviously is improper to have recourse to such premature efforts—where the hæmorrhage is *inconsiderable* and the os imperious, that we are to employ the plug. For the same reason, we must not confide in it for any considerable time, and should besides bear in recollection its tendency to accelerate dilatation. As soon, therefore, as we can effect the introduction of the hand into the uterus, to turn the child and accomplish delivery, we are to do so; nor in this are we to be deterred by the presence of profuse hæmorrhage, for we are then to proceed with the greater promptitude, and can do so with the more facility, the dilatation of the os uteri being greatly promoted by hæmorrhage. Where the patient has suffered from hæmorrhage, we invariably administer a cordial stimulant before we proceed to the operation of artificial delivery, for we shall then need uterine action in combination with our manual aid. The amount of hæmorrhage in placenta prævia will most commonly, though not invariably, be in proportion to the space which the

placenta occupied over the os uteri, or the quantity of it separated. Though this certainly be the general rule, Dr. Denman thus speaks of the exception to this rule:—"Women have been in as great danger when the mere edge of the placenta was fixed upon the os uteri, as if the middle had been placed over it; especially if the part separated be near the insertion of the funis, where the blood-vessels are large." And it will be remembered that the funis is not always inserted in the middle of the placenta. In no case of placenta prævia is the practitioner authorised in leaving parturition to the natural efforts, and the universal opinion of the profession is that we are bound to deliver by art, and promptly, too, in every case of this kind. But when the patient has been so reduced by hæmorrhage, previously to the practitioner being called in, that there is a reasonable doubt whether she still possess strength and vitality enough to undergo the exertion of *immediate* delivery, "even though the hæmorrhage should have ceased," a little time may, in such an extreme case, be allowed her for recovery from such exhaustion. It is only the circumstance, however, of a *cessation* of the hæmorrhage that at all warrants delay. Dr. Rigby is very decided in the opinion, and we must agree with him, that *during the hæmorrhage*, we are justified in proceeding to deliver, and will do so with every fair prospect of success. He says in one of his lectures:—"I remember a case of placenta prævia, where the syncope was so frightful that for some moments I was uncertain whether my hand was in the vagina of a living or a dead woman; the vagina was perfectly powerless, and so relaxed, that it felt more like a wet bladder wrapped loosely round my hand than any thing else; as to feeling the pulse, that was out of the question. No blood was lost during the turning, and as the uterus was gradually diminished in size as the child quitted it, slight signs of returning life appeared, the vagina began to recover

from its state of atony, and by the time the child was born, she could be sufficiently roused to swallow, and answer questions. Under those circumstances, the uterus, by contracting, expels a considerable quantity of blood from its spongy parietes into the rest of the circulation, which in some measure will supply the loss it has sustained. Where the patient has fainted two or three times, we must not wait to plug the vagina. We shall also find the os uteri, in such a case, flaccid and yielding, although from want of uterine contraction it may still remain closed. If, however, the os uteri, despite of all this exhaustion, be still rigid and undilatable, the plug must be had recourse to." There seems, therefore, no sufficient warrant for delay, except the patient be *both* exceedingly exhausted and free from hæmorrhage. By taking this view of the subject there will be no discrepancy between the advice of Dr. Denman and that of Professor Rigby. But the former does not neglect to caution us against protracted delay, lest, as he remarks, "The hæmorrhage should return instead of the pains, and the patient suddenly die." He wisely adds, "That it is better to deliver too soon, than to delay the delivery a moment too long." The prudent practitioner, therefore, will not hazard delay with a sinking patient, especially when he is told, on such authority as that of the experienced and conscientious Dr. Denman, that "There is little danger in a premature delivery, if the operation be performed with prudence; but that the delay of one hour will sometimes deprive us of all chance of success." He also tells us that, "Whenever the case demands the operation, on account of the danger of hæmorrhage, the state of the parts will on this account always allow it to be performed with safety, though not with equal facility." But promptitude in proceeding to the operation of artificial delivery, by no means authorises rapidity in its execu-

tion ; for the process must always be gone through with slowness and the utmost care.

108. There is nothing particular in the directions which the majority of professors give for the performance of delivery in a hæmorrhagic case, or different from the steps taken in artificial delivery by the hand and turning, for other reasons. But Dr. Dewees and the present Professor Rigby certainly propose a considerable and very important variation from the old custom in the case of placenta prævia. It was formerly the practice, and still is by many advised in this case, not to *detach* the side of the placenta, in order to introduce the hand into the uterus, nor to attempt to separate any portion of it ; but to proceed to *perforate* it, or bore through its centre, and thus deliver the child through the artificial aperture we make in the placenta, permitting *as far as we can*, the other parts of the placenta to remain attached for the prevention of hæmorrhage. But Dr. Dewees and Dr. Rigby coincide in deprecating such a practice as most injudicious. The following are the reasons they assign for objecting to the old method, and, to confess the truth, those reasons appear very sufficient.

“1st. In attempting this [the perforation of the placenta] much time is lost that is highly important to the patient, as the flooding unabatingly, if not increasingly, goes on.

“2nd. In this attempt we are obliged to force against the membranes, so as to carry, or urge the whole placental mass upward towards the fundus of the uterus, by which means the separation of it from the neck is increased, and consequently the flooding augmented.

“3rd. When the hand has even penetrated the cavity of the uterus, the hole which is made by it is no greater than itself, and consequently too small for the fœtus to pass through without a forced enlargement, and this must be done by the child during its passage.

“4th. As the hole made by the body of the child is not sufficiently large for the arms and the head to pass through at the same time, they will consequently be arrested, and if force be applied to overcome this resistance, it will almost always separate the rest of the placenta from its connection with the uterus.

“5th. That when this is done it never fails to increase the discharge, besides adding the bulk of the placenta to that of the arms and head of the child.

“6th. When the placenta is pierced we augment the risk of the child, for in making the opening we destroy some of the large umbilical veins, and thus permit the child to die from hæmorrhage; this is also observed by Dr. Denman, who, although he recommends penetrating the placenta, yet confesses there is rather more danger of losing the child.

“7th. We increase the chance of the atony of the uterus, as the discharge of the liquor amnii is not under due control.

“8th. It is sometimes impossible to penetrate the placenta, especially when its centre answers to the centre of the os uteri.”

109. Now as we think Dr. Dewees has fully made out his case, and has sound, practical reasons at his side, we shall describe his method of proceeding, in placenta prævia, as propounded in Dr. Rigby's lectures. The latter Professor, though somewhat in opposition to his eminent father on this point, carefully makes just a sufficient separation between one side of the placenta and the uterus to suffer the hand to be introduced, in order to get at the lateral part of the membranes. His words are:—“We produce no more separation of the placenta from the uterus than merely to allow the hand to pass, and what hæmorrhage might result from this is checked by the presence of the hand and arm of the operator acting both as a compress and a plug.” He then slowly and gently passes up the

hand, "between the placenta and the uterus, and between the uterus and the membranes, *without rupturing the latter*, and having reached the feet, *then* he pierces the membranes, and brings down the feet." By this method he controls the liquor amnii, and has not to turn after the loss of any portion of the waters. On the fullest consideration of the matter, we think that this method should recommend itself to every judicious practitioner. Dr. Denman seems to have been aware of the practicability of delivering according to Dr. Rigby's plan, for he leaves the practitioner his option whether he will have recourse to it, or perforate the placenta; but it is to Drs. Dewees and Rigby we are indebted for placing the merits of the question before the profession in a strong light. In all cases of placenta prævia, however, and with whatsoever care we conduct the process of turning, there is a manifest danger of the child being too soon deprived of the placental circulation; but this is a danger diminished rather than increased by Dr. Rigby's method; still the danger points out to us the propriety, so far as we can accomplish the *desideratum*, of delivering the child through the os uteri with the smallest possible separation of the placenta. This is a difficult task, and will require from the operator much dexterity and tenderness of management.

110. It has very inconsiderately been recommended to have recourse to injections *per vaginam* in uterine hæmorrhages. If such injections be intended to penetrate into the uterus, they are in the highest degree objectionable as calculated to wash away any coagula formed at the mouths of the vessels; and indeed it is difficult to see, if they be designed to produce merely a chilling effect on the vagina, any advantage in this respect such injections would present over a plug moistened with some cooling solution. A far less objectionable plan is that of introducing a piece of the intestine of some animal into the vagina, containing either pounded ice, or some freezing

mixture, tying the piece of intestine at both ends. If the refrigerating effect be our object, this produces it in a far more unexceptionable manner than can be done by injections. But we can generally refrigerate sufficiently by the application of wet cloths to the abdomen and labia pudendi, together with cold drinks. The caution given (126) against the too free application of cold locally should not, however, be overlooked.

111. But it is time to speak of the new method of treating uterine hæmorrhage proposed by M. Baudelocque, and with which he professes to have been *uniformly* successful, provided he were called in before the woman had got beyond all chance of benefit from any measure whatsoever. His plan, however, seems to apply chiefly, if not entirely, to hæmorrhage occurring after the birth of the child, which, to say the truth, is the most formidable of all. But we must leave the profession to judge, after we have briefly described this novel method, whether there may not be a possibility of applying it in a previous stage of labour. M. Baudelocque assures us, that, by flexing the trunk and inferior extremities on the pelvis, the abdominal aorta can be felt, through the parietes thus relaxed, and pulsating as distinctly as we can perceive the radial artery to do. It can be felt at the region immediately above the uterus, and even above the umbilicus. The finger and thumb have then the power of controlling its circulation, and arresting the hæmorrhage; but in doing this we are to take care that the pressure we maintain be not so great as to suppress the pulsation of the *femoral arteries*, to which we should apply our fingers for the purpose of ascertaining that they are in action. M. Baudelocque has invented a bandage for maintaining this compression; but in the account we have read he has not described this bandage. However, as he says that in slight cases of hæmorrhage a few minutes' pressure will suffice, and that even in the worst cases it need not be continued more

than half-an-hour, the plan is available with or without a bandage, and may be continued for any necessary time by the aid of an assistant. Besides, a little ingenuity may easily invent some artificial substitute for the finger and thumb in maintaining the pressure. M. Baudelocque immediately follows up this pressure on the artery with the administration of some stimulant to excite uterine contraction. Two stimuli are mentioned by him as useful on such an occasion, namely, the Ergot of Rye as an uterine specific, and the alternate exhibition, occasionally, of a spoonful of beef-tea, and the same quantity of Spanish wine, as restorative. In addition, he introduces the hand into the uterus, as well to bring away any coagula that might have formed therein, as to excite uterine contraction. In some cases he administers a glass of Spanish wine as a lavement, before he compresses the abdominal aorta, directing this lavement to be retained as long as possible. This is the substance of what M. Baudelocque states; and, if it be as effectual a remedy as this very celebrated obstetrician declares it to be, the discovery has achieved the greatest triumph that modern Midwifery can boast of. To the trial of so harmless an experiment, recommended by such very high authority, there can be no objection whatever. Since we have read the statement no opportunity of testing the plan on a case of uterine hæmorrhage has occurred in our own practice. Consequently we cannot add our testimony to that of the strong witness in its favour that we have just quoted. It is further necessary to remark, that M. Baudelocque keeps the extremities wrapped up in warm clothes during the process. It is said that the abdominal aorta can be compressed by introducing the hand into the uterus and thence grasping it.

112. But we must not neglect laying before our readers whatever advice other professors of established reputation have given to the world with regard to the best manner of proceeding

in this most anxious of all occurrences that can happen in obstetric practice. We have said quite enough concerning placenta prævia, and have remarked that in this case we have demonstrative evidence of the amount of hæmorrhage that is going on. But in hæmorrhage in the internal parts of the uterus, we are to judge of what we have to contend with by the depressing effect produced by the flooding on the patient : by the pulse becoming weak and rapid, or imperceptible ; by a general paleness, coldness of the body and ghastliness of the countenance taking place ; by restlessness, faintings, laborious respiration, and sometimes convulsions occurring. Such symptoms will of course put us on our guard, whether we perceive hæmorrhage passing into the vagina or not, and will direct our measures according to the urgency. Sudden and violent vomiting is not unusual after severe hæmorrhage ; and this symptom, though not a little alarming to the unscientific beholder, is not attended with so much peril as is apprehended, but, on the contrary, seems to check the hæmorrhage, and to afford speedy relief to the patient. We generally estimate the danger in internal hæmorrhage of the uterus as greatly more formidable when there are no pains, *cæteris paribus*, than when uterine action is present. The reason of this becomes sufficiently obvious (we are not now speaking of the “unavoidable hæmorrhage,”) when we reflect that uterine contraction is the sheet-anchor of our hope in the hæmorrhage of parturition. Dr. Burns, who, though by some persons accused of affecting singularity of opinion, is generally an acute reasoner, as well as an experienced practitioner and learned physiologist, appears to set but little value on the favourite distinction between active and passive hæmorrhage. He says, “In this distinction there is, I apprehend, more of formality than of practical correctness. In all arterial hæmorrhage there must be an excitement and consequently an increased action of the vessels of the

part; not a mere excitement, for this may lead to inflammation and other consequences, but one which leads to an action of a particular kind, called the hæmorrhagic, and which is more particularly confined to the vascular part of the organ. We often in apparently the same state of the system, and of its different organs, find sometimes menorrhagia, leucorrhœa, or amenorrhœa, or an alternation of these produced. It is not essentially produced by either plethora or general debility, nor by local debility, for all these states may exist without hæmorrhage. It is only produced by a particular effort of the vessels of the part beyond their power, whatever that power may happen to be. In place, then, of dividing hæmorrhage into active and passive, it is better to consider it as occurring in two different states of the system, or of the vessels of the part, but in both as the result of action disproportionate to the power." pp. 166, 167.

113. Dr. Burns, no doubt, is a highly respectable authority, both from experience and ability, but he will not find it an easy task to discard from the profession the distinction in question, or to convince them that no practical importance attaches to it. We care not whether it be termed "hæmorrhage occurring in two different states of the system," or "active and passive hæmorrhage," for we have no disposition to cavil at mere forms of expression. It is incongruous with the nature of the present work to go into abstract physiological or pathological speculations; but that the intelligent practitioner would make considerable difference in the treatment of a patient labouring under hæmorrhage with vigorous arterial action, and that of another where the lesion was very evidently attended with debility of the vascular system, is we imagine too obvious to demand argument, not to speak of Dr. Burns' very judicious opinion that the most formidable uterine hæmorrhage appears to be in a great measure venous. In uterine hæmorrhage con-

nected with parturition, however, the cause is too manifest to require our having recourse to any abstractions. In menorrhagia, indeed, there may be more room for discussion on the point adverted to; but this is not a matter for our present consideration.

114. The last-mentioned author has remarked on "the effect of hæmorrhage" in a manner worthy of the practitioner's notice, and we have great pleasure in borrowing it for the satisfaction of our readers. He says, "The loss of blood is the loss both of a source of energy and of a stimulus, and must therefore directly weaken or diminish action, and this is certainly the immediate effect of a sudden and great loss of blood. Syncope is the direct consequence, which may be deadly. But if the hæmorrhage neither prove immediately fatal, on the one hand, nor be perfectly recovered from on the other, we have some new circumstances to attend to. The actual quantity of blood is diminished, and therefore less must circulate in the arterial system, which must accordingly contract in the same proportion. It is very doubtful if the^d venous system contract in the same degree, for there is always an accumulation of blood found, even where hæmorrhage is fatal, in the vena cava, and veins of the brain, which is probably the cause of convulsion occurring, as an early effect of rapid and profuse hæmorrhage. If this [the venous] system diminish less, then, a still greater effect will be produced on the arterial system, and it must contract still more. A great or protracted hæmorrhage, if not speedily fatal, must be productive of vascular excitement, marked by different symptoms, according to the constitution of the patient, and other circumstances. It is more or less of a febrile nature, and it is usual to call it by the name of reaction, merely, I presume, because the system has not sunk under syncope, but the person has lived long enough to become diseased. In this state wherever a local cause exists productive

of action beyond what the weakened condition of the part can bear, we are in great danger of a severe local disease, and hence none are so liable to inflammation of the uterus or peritonæum, as those women who have suffered from uterine hæmorrhage." The foregoing observations are of great practical importance.

115. Though the part of Dr. Burns' extensive work from which we have made the above extract relates to menorrhagia, still several of the directions and observations therein given are applicable in a great measure to any species of hæmorrhage. And here we find that Dr. Burns, even after his discarding the distinction between active and passive hæmorrhage, does not in his practice lose sight of the conditions of the system which are regarded as the foundation of that very distinction. He very judiciously informs us, that, "The management during the attack must depend on the state of the constitution, and the effect of the discharge. In full robust habits, when the pulse is firm, when a synocha exists, and the hæmorrhage has not produced much debility, excellent effects may result, as in other tonic hæmorrhages, from the early use of the lancet, by which the uterine discharge is speedily checked, and that before the organ is so much injured as to occasion a rapid return. But if the pulse be weak, venesection is not to be proposed, nor can I conceive that it is in any case useful if long delayed. The patient, on a general principle, is to be kept from the very first in bed, that she may be in a recumbent posture. Next, we are to moderate the action of the vascular system by cold, that is, we are to have the windows open if in summer, and no fire if in winter, and no more bed clothes than are necessary to prevent shivering. The drink is to be sparing and cold. Sulphuric acid is to be given freely, and along with this digitalis may be prudently administered, so as to moderate the circulation, but if it have not *speedily* this effect, it does no

good, and is not to be persevered in. For the same purpose, nauseating doses of emetic medicine have been employed, and, sometimes, but chiefly in active hæmorrhage, with good effect, but we must not continue them so long as to produce much depression, nor trust to them at all if they do not *speedily* produce benefit. The diet is to be almost dry, and of the least stimulating and repleting quality. Wine and all excitants are to be avoided." Then follow directions with regard to the application of cloths wet with cold water to the vulva, back, and pubis. But this is little more than a repetition of what we have given in a preceding part of the present chapter, a repetition which we are induced to make entirely out of respect for Dr. Burns' name and a desire to add the weight of his authority. As to blood-letting, it is far more applicable either to menorrhagia, or to hæmorrhage in early pregnancy, than to that of mature parturition, being rarely requisite in the latter except in convulsions and other cases hereinafter treated of. Dr. Burns, is a strenuous advocate for the plug (a soft cloth) in the vagina; we have, however, before declared our preference for the soft sponge wrung out of vinegar; as we consider it both more manageable, as well as cleanly, than stuffing the vagina with rags or handkerchiefs. Dr. Burns does not object to the *temporary* employment of stimulants in case of an alarming prostration of strength; but he directs them to be carried no farther than is immediately necessary. He also speaks of the transfusion of blood, respecting which he acknowledges his inability to pronounce from experience of its effects; in a future chapter, however, the subject will be found disposed of. In some cases of delicate and feeble persons, even while we apply cold, locally, we must, if the feet and legs be very much chilled, envelope them in flannel; for the want of due circulation in the lower extremities has a tendency to determine more blood to internal organs. Dr. Burns attaches much impor-

tance to the administration of "a dose of opium not less than two grains, and this is to be repeated if the debility be greater." He says, "I consider this one of the best remedies we can employ, and when rejected by the stomach, it must be given in the form of clyster or suppository." He also recommends the injection of the solution of alum, or decoction of oak-bark into the vagina; and this he very properly prefers to spirituous injections. The presence of the plug in the vagina obviates any objection to injections on the score of their liability to wash away uterine coagula. Jellies and soups are the supporters of strength which Dr. Burns recommends; though in urgent debility he sanctions the "moderate and well-timed use of wine, either cold or warmed with spices," as well as opium and aromatic cordials, such as the aromatic spirit of ammonia in cinnamon-water. Of the acetate of lead, he advises from one to three grains, in four or six hours, in combination with half a grain of opium, to be given either in a liquid form, or in that of a pill; as also half-drachm doses of nitrate of potash three times a day. Dr. Dewees recommends the acetate of lead to be administered as a clyster, in the quantity of a scruple with a drachm-and-a-half of tincture of opium and a little water. Astringents such as rhatany-root, or tincture of kino, in liberal doses, Dr. Burns advises, when they can be got to agree with the stomach.

116. In the hæmorrhage specially occurring during labour, it will be necessary to keep in mind that its urgency will not permit us, when it is copious or obstinate, to confide long in any of the general means already pointed out, although they are to be conjoined as auxiliaries to our endeavours to get rid of uterine distention. In the first stage of labour, we are advised by a multitude of authorities to commence our struggle against the "accidental" hæmorrhage by piercing the membranes. Should not this bring on a sufficient contraction of

the uterus to counter-balance that partial detachment of the placenta, &c., by which the hæmorrhage is caused, i. e. should the flooding still continue, it calls for artificial delivery, either by turning, or by aid of instruments, as may be most suitable. It is only in the less urgent and alarming cases, and where immediate delivery is opposed by some circumstance, that we can have recourse to the palliative means. Combined with the rupture of the membranes, we are to employ friction of the abdomen, and other measures to promote uterine contraction, and among these Dr. Copland speaks highly of the efficacy of the turpentine epithem to the hypogastrium. Its efficacy in spasmodic contraction is certainly worthy of particular notice. The plug is not to supersede the rupturing of the membranes when the os uteri is in such a state of dilatation as to permit the latter. Dr. Burns remarks that it is often the case that hæmorrhage does not begin until the first stage of labour has been nearly or altogether completed. "If the membranes be still entire," he says, "it proceeds certainly from the detachment of part of the placenta or decidua, and often is connected with unusual distention of the uterus, from excessive quantity of the liquor amnii, or with ossification of the placenta. If the membranes have broken," he adds, "we may consider the possibility of its proceeding from rupture of the uterus, and must inquire into the attending symptoms. [See the chapter on this subject.] Sometimes it is found to proceed from tedious and exhausting labour, from improper exertion, or rude attempts to dilate the os uteri, or alter the presentation; or it may be caused by rupture of the umbilical cord." This shows the principle on which we proceed to pierce the membranes at such a stage; for every trust-worthy authority, and the one we have just quoted, among them, will be found to urge upon us, that we are to make all our efforts promotive of getting the uterus empty of its contents, and properly contracted,

whatever co-operating influence we may endeavour to excite on the vascular system by medicinal agents. Where the uterine pains are smart and efficient, we are authorised in trusting to the natural efforts for this primary object, always taking the precaution to keep the patient cool, and as free from excitement and unprofitable exertion as possible. But if the pains be weak and ineffective, and rather waning than increasing, whilst the hæmorrhage is augmenting, we must no longer delay whatever artificial assistance can be rendered to effect delivery. Dr. Burns most strongly recommends opiates in uterine hæmorrhage; but other eminent practitioners are not such exclusive advocates for the use of this drug. Dr. Copland warns us that it is not to be used without circumspection. He attaches more importance to opium in the form of Dover's powder, than in its uncombined state, and thinks that large opiates so far from bringing on contraction of the uterus, often cause it to fall into inaction and relaxation. It seems to be his opinion that we should have some symptom, such as extreme restlessness and spasmodic affection to justify our having recourse to this drug in quantity. Where there is a superabundance of action and excitement, we may be the less timorous of employing it.

117. In hæmorrhage after delivery, which arises, as we have before seen, from the uterus not contracting its proper substance so as to close the enlarged vessels, "particularly the venous apertures," says Dr. Burns, the discharge commences so soon as a partial detachment of the placenta or membranes takes place, and, unless efficient shrinking of the uterine fibres should occur, will continue until either death or syncope put a stop to it. When the flooding is owing to placental detachment, it is always more copious and impetuous than when it is caused by the partial disengagement of the decidua, on account of the larger size of the vessels which occupy the placental por-

tion of the uterus, as we have before intimated; therefore, the amount and gush of the hæmorrhage are somewhat diagnostic in this respect. Dr. Burns indulges in speculations as to the remote cause of uterine hæmorrhage, which not only appear to be pushed farther than those of most writers on the same subject, but seem also to influence his practice in the free administration of opiates. It is only fair to let the reader see what these speculations are, so that the intelligent practitioner may judge whether they have been adhered to with too much tenacity. He (Dr. Burns) considers that *spasmodic* contraction will be found as an accompaniment, if not as the specific cause of uterine hæmorrhage, and that so long as this species of morbid action continues, the first species, or general uterine contraction, will not proceed. He considers, likewise, and of the soundness of this view we think there can be no doubt, that the nerves specially actuating the circulation may be in a state of morbid excitement, while an atonic torpor of the general uterine substance prevails. Now the arteries are all found to be endowed with ganglionic, or as they are called ‘vital’ nerves, and the practice of giving stimulants to puerperal patients in the early part of their labour, and of keeping them too warm, has manifestly a tendency to excite the vascular system in a very marked degree, and is regarded by the most eminent practitioners as a very frequent cause of uterine hæmorrhage, while it tends to produce general relaxation of the solids. Dr. Burns tells us that “if any circumstance shall keep up an excitement of the nerves of the uterus [and undue manual interference will do so—which is another cause assigned for the occurrence of hæmorrhage], the whole vascular system is also kept active, and should this be conjoined with relaxation of a great part of the fibres, as happens when a part is thrown into spasmodic action, the effect in producing hæmorrhage must be decided.” Again, “In almost every, if not absolutely

in every instance of flooding, either before or after the expulsion of the placenta, we find spasmodic contraction of the fibres of the cervix uteri, which seems sufficient to excite the vessels, perhaps also to retard the return through certain veins. This spasm," he goes on to say, "if not the cause, is at least generally the concomitant, of a relaxed state of the rest of the fibres, and these two opposite states are both apt to be produced if the labour have been tedious, or the child expelled suddenly, by a strong, but perhaps only momentary, contraction. Even independent, however, of the state of muscular contraction, hæmorrhage may take place from that of the vessels, and sometimes has been prevented in those liable to it, from this cause, by detracting blood during labour, or in the end of pregnancy. But this seems useful, not so much, Dr. Gooch supposes, by lessening general plethora, as by its local influence on the origin of the nerves." pp. 504-505.

118. There can be no doubt, from the above quotation, that Dr. Burns' great partiality to opium in uterine hæmorrhage, arises from his idea that it overcomes this spasmodic action; but all writers will not be found to accompany Professor Burns to the full extent in this conclusion, many of them being disposed to think that the baneful influence of opium in causing atony may outweigh the benefit derived from its anti-spasmodic effect. But let us hear the Professor further concerning this spasm. He says, "The inertness of the uterus is sometimes so universal, that when the hand is introduced it passes almost up to the stomach. But generally a circular band of fibres contracts, spasmodically, about the upper part of the cervix uteri, enclosing the placenta above it, whilst the rest of the fibres become relaxed, or, the contraction may be higher, and merely the upper part of the placenta grasped by it, for there is no one part of the uterus exclusively affected. This has been called, though not very aptly, the 'hour-glass uterus,'

and if I did not know the hazard of establishing a general rule, I would say, that in almost every instance this contraction takes place. I have rarely introduced the hand into the uterus, in a case of flooding, without meeting it, whether the placenta had or had not been expelled. When it is not present in any degree, I suspect that its absence is often owing to an almost moribund state of the womb."

119. As to the indications of the existence of this spasm, we are told that it is accompanied with pain in the back, sometimes severe, great depression of strength, and a very feeble pulse, sickness and paleness, as well as by uterine hæmorrhage, which latter is not the sole cause of sinking and debility, inasmuch as these often precede internal hæmorrhage, though they are increased by it, to an alarming degree. "They depend greatly on the spasm," says Dr. Burns, "and, as I shall hereafter notice, sometimes arise from an affection of the spinal nerves. If a patient feel sick or weak, or the pulse sink, or she become pale, soon after delivery, whether there be or be not hæmorrhage, we may be sure that this spasm has taken place, or that she formerly has had an affection of the spinal cord, which is now operating in a dangerous way, and that in either case nothing but prompt measures can preserve life. This effect of spasm in causing debility, independently of the actual quantity of blood lost, or altogether disproportionate to it, is analogous to the effect of spasm in the stomach."

120. It is no wonder that, with such strong views on the subject, Dr. Burns should regard the combating of this spasmodic affection as the *sine qua non*. But let us proceed to consider the flooding after delivery, and the special treatment it requires. This hæmorrhage is not only more profuse and more sudden than that which happens before the expulsion of the child, but produces more speedy effects on the system. It is very common to find it before the placenta has come away,

and it is not then quite so great a cause of alarm, as after that uterine appendage has been expelled, because it is both more to be expected, and also rather more manageable. Dr. Burns observes, "If there be little spasm, or no great effect produced by it, the first gush may not produce debility, because it consists chiefly of blood which formerly circulated in the uterus, and is not taken directly from the general system; and the separation of the secundines not being wholly effected at once, the loss is more slow. But, speedily, even where the separation is partial, the effect appears in all its danger; and it is not unusual for the woman, if not assisted, to die within ten minutes after the birth of the child."

121. But though there certainly be quite enough to call for both the anxiety and unremitting attention of the practitioner in the occurrence of uterine hæmorrhage, more especially that after delivery; and though we ought to watch attentively for any symptoms indicative thereof, even where it does not make any *external* appearance, but remains pent up in the uterus, as sometimes is the case: still provident nature often steps in with a provision to check this most formidable calamity, for some of the deciduous portion attached to the mouths of the uterine vessels remains in combination with the coagulated blood. This forms a coating, of a brown colour, so lining the mouths of the arteries and veins as in the first instance to assist greatly in moderating the discharge. And yet (so little are those matters borne in mind that) I have seen one of those obstetricians, who seem to think that all the perfection of Midwifery consists in getting the job over with the greatest possible velocity, I have seen him, the moment the child had been literally dragged out by instrumental force, and while the mother still lay in a torpid state of insensibility, introduce his hand instantly into the uterus, and, without a single minute's delay, bring away, and entirely remove from the vagina, the

placenta and secundines, and forthwith take his departure in triumph, without waiting to see the result! Fortunately, nature sometimes counteracts such rashness; but how decidedly ought the reflecting and humane part of the profession to raise their voice against such barbarous indifference to the safety of a fellow creature!

122. There can be no doubt of the injurious effect of spasmodic action of the uterus, and while we conceive the removal of a partially detached placenta, with hæmorrhage after the birth of the child, as indispensable to the security of the patient, we are fully of opinion that all reasonable measures should be had recourse to, to counteract any spasmodic tendency, or diathesis, in the system; nay, without pledging ourselves to those views of Dr. Burns with regard to spasm and uterine hæmorrhage being almost if not entirely in the relation of cause and effect, we think that the practitioner would do well in looking to any symptoms, even in the latter end of pregnancy, that may point out a spasmodic tendency in the female—such as severe cramps in the limbs, or elsewhere. We should endeavour to obviate such a habit of body by all judicious means in our power; and if there be justice in Dr. Burns' opinion of some (functional we will call it) affection of the spinal column, as being frequently concomitant with uterine hæmorrhage,—and we are by no means disposed to deny the probability of this being fact,—the application of stimulating and antispasmodic liniments to the spine may not be an unimportant measure. We have not the least doubt that functional disorder of a nerve; such as attends pain and spasm, is very often occasioned by what is technically styled a congestive state of the vessels supplying some part of the nervous substance; for we have repeatedly known the pain and spasm to be removed by means which must have acted in the way of removing congestion. Whatever objection hypercritical physiologists may have to the term

congestion, as applied to any state of the vascular system consistent with vital action, we know that in a comparative sense, though certainly not in an absolute one, the term properly denotes a state of imperfection or inertness in the vital action in relation to the quantity of fluid in the vessels or part, which does frequently prevail. Now we have seen, as we have just intimated, the most striking and immediate efficacy, in the removal of this state and restoration of the vital function, to result from friction over the origin of the nerves with some stimulating antispasmodic liniment, which manifestly operated in the two-fold way of awakening nervous energy and diverting a portion of the circulation to the surface. One of the most powerful of those liniments we have ever tried is highly rectified Naphtha, in which camphor is dissolved, and to which is added a portion of the essential oil or Spirit of Rosemary. Naphtha, if we mistake not is a carbonate of hydrogen. The efficacy of this liniment is sometimes surprising. And there is one circumstance we would notice with regard to it, namely, that while you employ it in the way of continued friction it will leave no mark of irritation on the skin; but if you keep a small quantity of the fluid in the palm of your hand for some time steadily applied to any tender surface, such as the epigastrium, without moving the hand, it will act as a very decided rubifacient, and irritate the skin to a perceptible degree. The only objection to Naphtha is the difficulty of obtaining it in a pure and rectified state, and when it is unrectified its smell is intolerably offensive. Its influence over rheumatic and other spasmodic pains, as a topical application, I have fully experienced to be far superior to that of most other substances; and several practitioners to whose attention I have recommended it fully confirmed my experience. A liniment, therefore, composed of the forementioned ingredients, or of any other of a similar tendency, may be applied over the spine, or at any

part which is the seat of spasmodic pain. But if Dr. Burns' strong opinion with regard to some women being predisposed to such attacks as we are treating of in consequence of some mal-condition of the spinal substance be corroborated by a tenderness on pressure at any part of the spine, particularly its inferior or lumbar region, leeches ought to be applied to that part some time previous to parturition, and camphorated mercurial ointment rubbed after the leech-bites have healed, until the gums have become *very slightly* touched. Yet we must not forget that Dr. Malins and other respectable authorities have considered that "hour-glass contraction" of the uterus, which Dr. Burns regards as proof of the existence of a morbid condition of certain nerves, as merely a recurrence (prematurely it may be granted) of the kind of contraction which takes place in the uterus in an unimpregnated state, dividing the organ into two portions, which division disappears only in gestation. If this view be correct, the contraction in question does not indicate any very decided morbid condition of the system. Of the manner of removing the placenta we have already spoken (99), and of the propriety of bringing away any coagula with the hand. Dipping the hand in vinegar before introducing it for this purpose has been recommended, and perhaps may have some efficacy in promoting uterine contraction; there can be little harm in trying it at all events.

123. The rash and precipitate extraction of the placenta, immediately after delivery, where there is no profuse hæmorrhage to justify it, we cannot too often protest against. It is apt to be quickly followed by copious flooding, unless the uterine contraction fortunately happen to be proceeding with uninterrupted regularity. A considerable quantity of the hæmorrhage thus caused may be masked, or kept in the organ by the formation of coagula, or a portion of the decidua, blocking up the uterine orifice and preventing the discharge of any fluid

into the vagina. This should always be examined into; for frightful distention of the uterus has taken place under such circumstances, and this is a perilous and deceptive condition, discoverable, if we do not make an actual examination within the os uteri, only by symptoms of prostration in the patient. Too much exertion or motion on her part immediately after the extraction of the placenta, even though that operation be not unduly executed, may be the exciting cause of hæmorrhage, or it may be the effect of either heating or mental or other stimuli. So that we see how great necessity there exists for quietness, moderation, caution, and the horizontal posture at such a period. Time should be given to the uterus to establish itself in a *permanent* state of contraction, which is so paramount a consideration that nothing must be placed in competition with it.* It is to be hoped that what we have said in other places against pulling the umbilical cord will not be forgotten. This, by partially inverting the uterus, may be the cause of hæmorrhage, and in the event of the latter occurring, the condition of the organ in this respect ought to be speedily examined into. But this matter has been made a special subject of discussion.

124. Probably it will be thought that we have said quite enough on the subject of uterine hæmorrhage in this place; but it is a matter of such vast importance, that we are desirous to omit nothing deserving of attention with regard to it. We shall, therefore, avail ourselves of a very striking description of the effects of flooding which Dr. Burns gives in his elaborate work, and which will prepare the inexperienced practitioner for what he may meet with under so trying an occurrence as profuse flooding. Professor Burns says—"If flooding occur after delivery, the woman says there is surely an unusual dis-

* All this must be regarded within proper limits.

charge; and, on examining, it is found to be really so; but, at first, the pulse is pretty good, and the countenance is not much altered. In a minute, perhaps, the pulse sinks, the face becomes pale, the hands cold, the respiration is performed with a sigh, or, after lying quiet for a little, a long sigh is fetched, and the patient seems as if trying to awake from a slumber. She exclaims she is sick, and immediately vomits; she throws out her arms, turns off the bed-clothes, and seems anxious for breath; she complains of cold, or perhaps is listless, and begs not to be disturbed; or lies in a state of approaching syncope, or gazes wildly around her, and is extremely restless, breathes with difficulty, and quickly expires. The danger of flooding is universally known, and the consternation excited by it is in many cases great. One exclaims the patient is dead, another she is dying, one is wringing her hands, another running for cordials, and it requires no small steadiness and composure in the practitioner, to prevent mischievous interference, or procure necessary aid."

125. This is certainly a graphic picture; for nothing is so likely to create terror, confusion, and indecision as severe flooding. It therefore behoves the medical attendant to bear in mind the great benefit derivable from judicious interference even in this most formidable complaint, and to maintain perfect presence of mind under the most alarming circumstances. The author from whom we have just quoted lays great stress on conducting the process of delivery, even when we find it necessary to afford manual assistance, so slowly as to give the uterus time to contract in proportion as we extract; and when the uterine efforts are adequate to the expulsion of the child, we are rather to retard it, by our support of the perinæum, than to endeavour to accelerate it. By observing those sound principles, which cannot be too often reiterated, the practitioner will have no reason to lament the apparent waste of a little

time. Dr. Burns also insists much on the utility of exciting the uterine action by supporting (moderately pressing upon) the abdomen,* more especially immediately after delivery. He recommends it as a general rule. He likewise advises the diminishing of the quantity of bed-clothes, and the admission of cool air into the apartment at this time, in conjunction with the most perfect quietude: and to prevent bustle and exertion, it will always be advisable to have the abdominal belt or binder so arranged previous to delivery, that we shall have nothing more to do than to tighten it. All this will be facilitated by having either straps and buckles, or tapes for tying, instead of pins.

126. But, when we find that the measures ordinarily had recourse to in flooding have failed in promoting that indispensable condition *permanent* contraction, no time is to be lost in introducing the hand into the uterus; for we must remember that the uterus may relax after having contracted to a considerable degree. If we find the uterus spasmodically contracting, which, according to Dr. Burns, we almost invariably shall in uterine hæmorrhage, we are to proceed, as formerly has been stated, gently and perseveringly to dilate the partially contracting part with our separated fingers, and by no means to withdraw the hand until we find the the whole uterine substance closing upon, and as it were expelling it. It is not so much by what may be called pressure against the walls of the uterus, as by letting the backs of our fingers play or gently tap against them, that we best excite this action. Such stimulus of excitement may be added to co-temporaneous friction on the uterine region of the abdomen, and by the occasional and sudden application of cold thereto, such as the slapping it with

* This is elsewhere specially treated of.

a cold wet napkin, squeezing cold water from a sponge, or dashing it from a jug upon it. Generally, however, the application of a cold wet hand will suffice. In the local application of cold, in such cases, we are cautioned by Dr. Copland to rely much more upon its *sudden* and *occasional* application, so as to cause a sort of nervous shock to the system, than to a *permanent* continuance of such refrigerating applications, which, he says, may induce relaxation rather than contraction of the uterus. In this opinion we participate. Dr. Burns tells us, in conformity with his theory, that "These [measures] are aided by the instant exhibition of forty or fifty drops of laudanum."

127. Dr. Burns tells the practitioner not to mistake the "flabby lips of the os uteri" for clots of coagulated blood. But in our chapter on hypertrophy of the labia of the os uteri, remarks concerning the preternatural forms they assume will be found. When a considerable portion of the placenta is below the contracted part where the uterus has spasmodically narrowed its diameter, and the stricture does not press upon the funis, the removal will be more easily accomplished than when the entire placental mass is placed above the "hour-glass" stricture. After dilating this (for this, too, must be effected to a certain extent), we should promote, in the way we have pointed out, by tapping (or titillating) with the fingers on the uterine walls, the general contraction of those parts of the uterus which show a disposition to continue flaccid. But this is far better accomplished in a gentle than in an irritating manner; and indeed judicious professors always caution us against doing any thing that might cause inflammation in so delicate an organ as the uterus. The introduction, therefore, of ice into its cavity, is what we can by no means counsel. We have also some doubts of the advantage of introducing a piece of sponge dipped in cold water in the hand, though a

proposition less objectionable than that of the ice. The external pressure and friction, in conjunction with our internal operations, can be managed by an assistant, and this is far from being inefficacious. We have elsewhere spoken of the Ergot of Rye as a medicinal agent to promote uterine contraction. It certainly has this effect, and therefore is indicated in atony or flaccidity of the uterine walls.* Dr. Copland prefers the exhibition of muriate of ammonia as superior to that of nitrate of potash in uterine hæmorrhage. He says that it is more likely to be serviceable, especially in cases of debility, and where the discharge is intermitting. It may then be given with cinchona, or small doses of opium. No medicinal agents but those of the most prompt and efficacious kind are at all to be thought of under circumstances of such urgency. The turpentine enema and epithem are very strongly recommended by Dr. Copland in the depressed states of flooding. The same authority speaks of ipecacuanha as useful in counteracting the irregular or "hour-glass" contraction of the uterus. We should remember the tendency which spirituous and vinous stimuli have to affect the head, and not be too liberal in our use of them. Ammonia is not so open to this objection, and affords very seasonable relief in depression of the nervous system. Many authors have been loud in their praise of dry-cupping, on the mammæ and other parts, as a derivative in vascular determination to the uterus. There is no harm in trying it; but we will not answer for its efficacy. A question here arises whether, when the uterus is peculiarly slow in contracting on our introduction of the hand—a thing that sometimes, but not often, will happen—we should invariably persevere in keeping the hand in the organ until the contrac-

* But by no means is applicable to irregular or "hour-glass" contraction.

tion be completely accomplished? This is supposing an extreme case, indeed, but one that may occur. Dr. Burns is far more friendly to repeated introductions of the hand, than to its too tedious and fatiguing delay in the uterus at any one time. Our great object must be not to weary the patient. And we must carry this principle so far, even after having put a stop to the hæmorrhage, that we should not move or disturb the patient for some time, under the idea of making her comfortable by changing her, but must suffer her to lie in perfect quietude until *reasonable time* shall have transpired for the uterus to establish its perfect contraction.

128. When necessity demands the exhibition of cordials or stimulants, we must either diminish them in frequency and quantity, or discontinue them altogether, as soon as we have rallied the patient from her alarming depression, and improved the state of her pulse: taking care not to carry stimulating to such an extent as to produce a state of excitement. The judgment of the practitioner, with vigilant observance of the minutest changes in the state of the patient, must here direct him, for no rule can be given but to act according to circumstances. We do not say that both wine and burnt brandy and water may not be exhibited with propriety; but they certainly must be given with extreme discretion. While Dr. Burns admits the necessity for thus supporting the sinking patient, he again and again recapitulates his recommendation of opiates. He says, "Opiates are of great service in *all* cases of uterine hæmorrhage, after delivery. They are among the safest and best cordials we can employ, and must, *in every instance*, be exhibited. The dose ought to be proportioned to the urgency, varying from fifty to sixty drops." We are glad, however, that the Professor has his misgivings with regard to the propriety of going so far in the administration of this Herculean drug as several of his professional brethren have gone: for he

staggers at a hundred drops of tincture of opium, or five grains of solid opium, in the first instance, followed by three grains every three hours 'till the patient's danger be over, and contents himself with exhibiting solid opium in doses of one grain, "after the pressing danger is past." Aromatics, such as the tincture of canella, he advises to be given in those cases; and, when the patient's stomach can bear it, soup in very moderate quantities. The occasional conjunction of stimulants with opiates he is also favourable to, but assures us that the latter [opiates] "never prevent the contraction of the uterus, nor produce afterwards any bad effect." It is very true that when the system has suffered severely under pain and great exhaustion, especially in spasmodic affections, opium does not produce the same baneful effects as we witness from its exhibition in a state of health. But we are of opinion that it always demands caution, and watchfulness of its effects; and not a little will depend upon the habits of the patient in accustoming the system to its action. We have found the combination of camphor, antimonials, and even saline substances, with opium and other narcotics of the greatest utility in counteracting their noxious effects, without interfering with those we have an object in accomplishing. We have before remarked upon the influence of occasional vomiting in uterine hæmorrhage, and even of syncope; the former tending to promote uterine contraction, and the latter causing a truce to vascular excitement, and affording time for coagula to form in and in some degree plug-up the mouths of the vessels; still its too frequent recurrence, or prolonged continuance, cannot be viewed with complacency. Solid opium in doses of one or two grains, is very often administered to allay irritability of the stomach, though we have accomplished this purpose, in a less exceptionable way, by frequently giving very small effervescing draughts with from four to eight drops of tincture of opium, with or without three

or four drops of the compound tincture of Lavender in each. As for syncope, when it is desirable to dispel it, the face is to be sprinkled with cold water, and when the patient can swallow we may administer some of the aromatic spirit of ammonia with tincture of opium, in cold water, use a stimulating embrocation at the epigastrium, or even a sinapism, or the liniment we have before spoken of, or the volatile liniment, and follow this up by a moderate exhibition of wine and other cordials.

129. Perhaps we ought to mention that the occurrence of that irregular contraction of the uterine fibres, to which Dr. Burns assigns so much importance in flooding, is indicated in general by the presence of "grinding pains." It appears to be for the purpose of relieving those that the Professor is so very partial to exhibiting opium. But besides the formidable and extremely perilous profuse uterine hæmorrhage we have described, there may be an uterine discharge of a slower, but prolonged kind. In this, a gradual but imperfect contraction of the organ goes on, but not sufficient to prevent the escape of a portion of blood, gradually, from the uterine vessels. This blood forms into clots in the diminished cavity of the womb, the shape of which the coagulum often assumes, and it is occasionally expelled, with some pain, and a discharge also of fluid blood accompanying it. This is not an unfrequent consequence of retention of a portion of the placenta, or at all events it resembles the symptoms attendant upon that circumstance. It would be well, therefore, always to examine the placenta, in order to be assured that it came away entire. But the description of hæmorrhage we now speak of may exist independently of such retention, and then is characterised by the shape of the coagula being more regular and correspondent with the form of the uterine cavity. Premature exertion on the part of the female has occasioned a small draining of blood to take place from the uterus to which Dr. Burns gives the name of

“Menorrhagia lochialis.” Occasional laxatives, together with opiates, he considers indicated in such cases. Where portions of the placenta have been retained, and afterwards have been discharged in a putrid state, the os uteri seems to remain partially open and irregular. If we make uterine examination in such a case, we must be careful not to employ rude force so as to irritate the uterus. This state of things is often accompanied by so much hæmorrhage as to induce practitioners to employ the plug;* and, in order to promote the healthy action of the uterus, and remove morbid matter from its surface, as well as to help the removal of the retained portion of the placenta, there has been injected, by aid of a syringe, into the uterine cavity, either plain water, nearly cold, or, when the smell was very offensive, a weak solution of chloride of lime with the intention of correcting the putrid tendency. The patient, with respect to diet and medical treatment, must be dealt with according to the greater or lesser tendency to febrile excitement. Rest, tonics, more especially the mineral acids, bathing the pubis with cold water, and injecting astringents into the vagina three or four times in the twenty-four hours, are the measures commonly adopted for the cure of “Menorrhagia lochialis.” An infusion of green tea is a very useful vaginal injection in slight cases. Of course, the means before indicated for promoting uterine contraction, such as friction upon the abdomen, and the occasional application of cold and moisture thereto, should not be lost sight of whenever the presence of hæmorrhage points out the necessity for them. Neither should the exhibition of enemata be omitted in such cases; and emetics are supposed to prove useful in exciting the uterus to expel coagula and other foreign bodies.

* Aided by a well-adjusted compress over the uterus.

130. Attention must be paid to the state of the stomach and intestinal canal after such attacks as we have just treated of. The very measures we are sometimes forced to employ may create an irritability of the intestinal mucous surface, terminating in diarrhoea and gastric symptoms. These are to be combatted, on the usual principles, by stomachics, astringents, demulcents, or with whatever other remedies the state of the patient may suggest. A rice diet, however, is particularly suitable for all irritable affections of the intestinal canal, being at once highly nutritive and unirritating. Pain in the back will sometimes yield to the application of cloths wetted with vinegar; but if we have reason to suppose the pain connected with local debility, a warm or strengthening plaster to the region affected may afford relief. Nervous symptoms may occur; but our space will not permit us to go too minutely into such matters.

N. B. We perceive that a verbal inaccuracy escaped our attention, in the note, page 82, until the sheet in which it occurs had been printed off. In alluding to Dr. Dwyer's valuable opinion respecting the best method of bringing down the arms in breech and footling cases, and also the great importance of abstaining from meddling interference in the latter; we stated that talented Gentleman's name to be James. This was an error, which we request the reader to rectify. His Christian name is Henry, (not James,) his residence, Ely Place, Dublin.

CHAPTER VIII.

INVERSION OF THE UTERUS.

131. This mishap, and a very formidable one it turns out to be, unless immediately discovered and speedily rectified, is too often the work of the rash practitioner, who occasions it by dragging at the funis, with the view of expediting the detachment of the placenta, in order to liberate himself the sooner from the puerperal chamber. But though this reprehensible practice has too frequently been the cause of uterine inversion, there may occasionally be some peculiarity in the uterine action itself to favour such an occurrence as inversion. It has even been attributed to the sudden interruption of abdominal, or muscular pressure, after delivery, on the uterus, the abdominal muscles ceasing to confine the uterus, and especially its fundus, while the latter continues its expulsive action. If this be so, and it is not improbable, we see from it the necessity of substituting the pressure of the practitioner's hand, for that of the abdominal muscles, at such a moment, as we have before advised. But from whatever cause this evil may arise, not a moment is to be lost in restoring the uterus to its regular form and position, for its inversion not only subjects the patient to severe hæmorrhage, but becomes more and more difficult of adjustment by delay. Inversion may be more or less complete: the fundus may be merely depressed, so as to occupy the os uteri; or it may protrude through the vagina, forming an inverted pouch, with the cervix uteri at the superior, and the internal surface of the fundus at the inferior part. A very complete inversion of the organ is not of frequent occurrence,

but to whatever extent it may take place, the dangerous consequences of inversion are very great. The patient herself experiences symptoms denoting the accident. She is conscious of considerable pain of a "bearing-down" character ;* her countenance and pulse become depressed ; and profuse hæmorrhage is an almost invariable concomitant. But it is not uncommon for partial, or incomplete inversion to give rise to far more copious flooding than where the inversion is more perfect, for in the latter case we may conceive the uterine substance to undergo more general contraction than in the former. The sensation is that of a dragging at the stomach, and as if the bowels were pulled out of the abdomen. Neither is it unusual for faintings and convulsions to occur. When our attention is arrested so as to induce an examination per vaginam, all doubt is soon dispelled with regard to the nature of the case, for we find a fleshy mass more or less protruded into the vaginal canal, while the hand placed externally upon the hypogastrium fails in discovering the uterine tumour through the abdominal parietes. Inversion of the uterus has been known to happen from a preternatural shortness of the umbilical cord, and vigorous uterine action combined ; the child being suddenly, and with considerable force expelled, and bringing down the fundus uteri along with it, owing to insufficient length of the funis. But we shall not go into a detail of all the speculations that have been put forward concerning the causes of inversion. It is of vastly more importance to point out the course to be pursued when the occurrence takes place. Our object, then, is to return the uterus before the os and cervix uteri can contract ; for this contraction would oppose a very formidable, if not insurmountable obstacle to our success. When such symptoms as those described are witnessed, and in all cases where

* With distressing sense of sinking and debility.

we miss the uterine tumour from the hypogastrium, where, if we pursue the directions already given, we shall never fail to seek for it, we are to make a special examination, in the vagina, and, should we find the protruded uterus there, we must carefully carry it up to its natural position, retaining it in its proper place, with the hand within it, until due contraction become general; and even then the hand is to be very slowly and cautiously withdrawn. But, in order to effect the return of the uterus, we must first compress the tumour, or inverted fundus, between our fingers before we endeavour to carry it up, for thus we shall more effectually overcome its resistance than by the mere pressure of the substance upwards. A little dexterity will generally succeed, where we are prompt in affording assistance, but the fingers appear much more convenient for the operation than a round piece of wood, or other similar instrument wherewith to make pressure.* Should the placenta be considerably adherent to the uterus, we are by no means to separate it until we have returned the uterus and find it contracting so as to effect the separation by its own efforts. Indeed, in this case we should employ additional caution in the removal of the placenta. The treatment of any hæmorrhage occurring in this case must be conducted on the principles before inculcated. When delay has unfortunately taken place before our discovering or operating upon a case of *inversio uteri*, the accident has sometimes baffled the most eminent skill; so that attention to the possibility of its occurrence should never be omitted by the practitioner, as well when delivery has just terminated, as occasionally afterwards. Dr. Denman says, "The impossibility of replacing it, if not done soon after the accident, has been proved in several cases to which I have been

* It may be worthy of consideration whether the bladder as recommended in retroversion may not succeed in partial inversion.

called so early as within four hours, and the difficulty will be increased at the expiration of a longer time. Whenever an opinion is asked or assistance required in those cases which may not improperly be called chronic inversions, it is almost of course that the reposition should be attempted; but I have never succeeded in any one instance, though the trials were made with all the force I durst exert, and with whatever skill and ingenuity I possessed; and I remember the same complaint being made by the late Doctors Hunter and Ford; so that the reposition of a uterus which has been long inverted may be concluded to be impossible. It seems as if the cervix of the uterus continued to act, or had soon acted in such a manner, as to gird the uterus so firmly, that it could not be moved: yet the inverted substances of the back of the uterus, though lying in contact, have not been found coalesced together, so as to form one mass, as has been surmised. All that art can do in such cases, in which the patients are commonly subject to profuse mucous discharges, or to frequent hæmorrhages, but without any considerable pain, is to alleviate their sufferings, to moderate symptoms, and sometimes to support the perpending uterus by a flat pessary." It should be borne in mind, that we are more likely to overlook that partial degree of inversion, where the fundus does not pass through the os uteri into the vagina, but remains in a state of convexity as to its inner surface, than when it becomes completely protruded into the os externum. It is manifest, also, that our hopes of success are far greater in the incomplete case than in the other. Dr. Denman cautions us against removing the placenta when the uterus is in a flaccid state, as to do so may become a cause of inverting the organ. But it is to be hoped that quite enough has already been said in these pages to discourage such a practice. Nor ought we to forget what that eminent obstetrician has observed with respect to the disposition to invert which

might be given to the uterus by even slight bearing upon the funis. We should not omit to notice a remark that Dr. Denman offers with regard to an adhering placenta in inversion of the uterus. If, for instance, the separation of the placenta be *nearly* effected before we proceed to replace the uterus, Dr. Denman inclines to the opinion that we may, in such case, complete the separation before we return the uterus; but if the adherence be more complete, we must decidedly return both together, as before advised. Any, even the slightest, delay in such circumstances is objectionable. And, indeed, Dr. Denman, with his noble candour, relates a case where his waiting to separate the placenta, in complete inversion of the uterus, seems to have been fatal to his success. In some instances of permanent inversion, the protruded portion of the uterus has been removed successfully, by a ligature, composed of wire or other material.* Though, from what has been said, there

* TREATMENT OF CHRONIC INVERSIO UTERI.

Notwithstanding the very discouraging opinion which we have above copied from Dr. Denman regarding the result of any treatment he could devise for chronic inversion of the uterus, we are proud to say, for the sake of suffering humanity, and for the honour of obstetrical science in Ireland, that one of our most eminent practitioners, Dr. Charles Johnson, of this city, has unequivocally proved that the case is by no means so desperate, or so removed from efficient aid from the well-informed medical adviser as the justly celebrated Denman imagined. The Faculty have to thank Dr. Johnson for setting all their doubts on this point at rest, and demonstrating to them, as he has done by his own persevering and enlightened experience, and ably illustrated by conclusive cases published in the *Dublin Hospital Reports*, that the unfortunate sufferer from chronic inversion is not to be consigned to corroding despair, or trifled with by paltry palliative treatment, an object of anguish to herself, and of loathing to others during the miserable remnant of her days; but may be restored to a comfortable state of health.

We shall subjoin all the particulars of two of those cases

appears but a dull prospect of our succeeding in replacing an inverted uterus unless our proceedings be very prompt; still we shall briefly mention what has been considered by some practitioners to be somewhat auxiliary to our success. Bleed-

which we deem sufficient to convey to our readers a thorough knowledge of the symptoms as well as mode of treatment so successfully adopted by Dr. Johnson in this malady, so long the opprobrium of the profession.

CASE No. 1.

Mrs. M——, æt. 20, had by the advice of her medical attendants in the country, come to the neighbourhood of Dublin for the purpose of sea-bathing. Dr. Johnson was first consulted by this lady in July 1820, when she communicated to him the particulars of her afflicting and apparently hopeless case. At that period 14 months had elapsed since her confinement with her first child, and during that long and melancholy interval the youthful patient had been subject to a constant discharge from the vagina, principally consisting of mucus tinged more or less with blood. During that time the catamenia were unusually frequent and profuse, and the slightest exertion brought on an attack of uterine hæmorrhage.

From these exhausting drains on the system the unhappy sufferer was reduced to an awful state of debility. She was literally unable to walk across her room, and was obliged to be carried like a helpless baby from her bed to her sitting room. She had perspirations at night, and occasional attacks of diarrhœa; she was emaciated in the extreme, and her lips and cheeks were completely bloodless. In short, the hectic of Phthisis and its fearful concomitants could scarcely leave a more melancholy ruin.

She stated that after the birth of her child considerable pain and difficulty attended the removal of the placenta, and that since that period she had never been free from a sense of weight, and a discharge of mucus or of blood.

Whilst in the country, she had been treated for menorrhagia, and leucorrhœa, with bark, acids and the cold bath.

About six months before she came to town, Dr. Clarke, who had been consulted by letter, recommended that a vaginal examination should be made: this was accordingly done by her

ing, whether from the vessels of the uterus itself, or ordinary venesection and opiates, together with the warm bath, may contribute to relax the spasm of the cervix uteri, and so may the tobacco enema as used in strangulated hernia when the

medical attendant in the country, without, however, his having ascertained the real nature of her disease.

Dr. Johnson having thus learned the history of the case, proposed another examination per vaginam. But to this the patient refused to submit, assigning as a reason that the former examination had not been productive of any advantage. After some time, however, finding herself becoming every day weaker, she again sent for Dr. Johnson, and agreed to abide by his advice. On making a careful examination, he found a tumour descending into the vagina. This tumour was about the size and shape of a pear, and had its neck surrounded by the os uteri. Though pressure on the tumour was attended with pain, still it did not appear to be more acutely sensible at that point than at the adjoining parts of the vagina.

Dr. Clarke was now requested to see the patient in conjunction with Dr. Johnson. The former also proceeded to make an examination, and drew an inference from appearances, that the tumour was a polypus uteri.

The issue of their consultation was, that the tumour should be removed by ligature. A ligature was accordingly applied and the tumour was without difficulty included in it; but each time the ligature was tightened so much pain was occasioned by it, that after three days it was considered necessary to make another vaginal examination; and it was ascertained that the case was one of partially inverted uterus.

As it appeared to be indispensably necessary for the patient's safety that some measure calculated to check the exhausting discharges should be adopted, the ligature was continued, and it was resolved to proceed very cautiously to tighten it. In three weeks the tumour that was included in the ligature came away, and proved to be the inverted fundus of the uterus, with the Fallopian tubes, [which Dr. Johnson deposited as a valuable specimen of this insidious disease, in the Museum of the Royal College of Surgeons, Ireland.]

This lady's amendment became rapid and satisfactory after the first week. She soon returned to her former locality in the country, and in two months, instead of being equally helpless, with a baby in arms, she was able to make a journey of fifty miles in one day without being fatigued!

taxis has failed; but it is obvious that such measures must be attempted with very great circumspection, and that when that swelling of the protruded uterus, which so rapidly takes place, once sets in, our hopes of succeeding in reduction by any

Dr. Johnson does not appear to have had an opportunity of seeing the patient afterwards; but he had the gratification of receiving a satisfactory visit from the young lady's mother a few months after the convalescent's return to the country. It seemed from the mother's statement that the only subject of solicitude was the temporary absence of the catamenia; but these had returned: the lady having menstruated twice since her arrival at home; and all their apprehensions were at an end.

CASE No. 2.

The second case recorded by Dr. Johnson is not of a less satisfactory character than the fore-mentioned one, and conveys some additional instruction. We shall relate its particulars.

Mrs. B—, æt. 27, complained that for the last *six* years she laboured under profuse leucorrhœal discharge, with frequent attacks of hæmorrhage, so violent as to reduce her to a state of extreme debility. The slightest exertion was followed by an increase of the hæmorrhage. Her feet and legs became œdematous, and she resembled a person in the last stage of consumption. In addition to these symptoms, there was perceptible in the abdomen a tumour, which was evidently an enlargement of the left ovarium.

She dated her present indisposition from the birth of her last child, which took place in January, 1816, [six years added to which date brings us down to the year 1822]. The first month after her confinement, she suffered principally from retention of urine; but as she began to walk about, hæmorrhage commenced.

She consulted at different periods several professional men, who, without making any vaginal examination, prescribed general remedies. Rest, the horizontal position, and dilute sulphuric acid gave a temporary check to the violent discharges under which she suffered; but the check was only temporary, for the discharges always returned when she resumed the erect posture.

Dr. Johnson, having satisfied himself that in this case, as in the former, there was a chronic inversion of the uterus, applied

measures whatever, become very faint, indeed. In those cases of what Dr. Denman terms chronic inversion, the state of the protruded mass, often requires strict surgical superintendence. And, if its diseased condition should prove too formidable for

the ligature on the 19th of November. When he tightened it, the pain produced was considerable; and on the morning of the 20th, he found that his patient had passed an uneasy night, and was then labouring under retention of urine.

Hoping that the uneasiness of which she complained might have been owing to the distention of the bladder, Dr. Johnson had recourse to the catheter. On the following day, however, finding that she had had a second restless night, that the retention of urine continued, that she complained of pain in the back, and side of the abdomen, and that the pulse was accelerated, he thought it prudent to remove the ligature till these symptoms should subside.

He was not without hope that, as the discharge had become putrid, the vessels might have undergone a sufficient degree of pressure to check the hæmorrhage. This hope, however, proved fallacious; for after three weeks the hæmorrhage returned. Mrs. B., nothing intimidated by the suffering she had previously endured from the ligature, requested that it should be again applied.

The Surgeon-General was now called in, and Dr. Johnson disclosed to him the plan of treatment he had adopted. Of this plan the Surgeon-General expressed his approbation, and the ligature was accordingly re-applied on the 24th. On the morning of the 25th, Dr. Johnson was sent for, and told that his patient had suffered during the preceding night from retention of urine; however, before his arrival she had evacuated the bladder, and was then free from uneasiness.

On the 27th, the discharges became putrid; the ligature was this day tightened; it produced considerable pain which was relieved by the exhibition of an opiate.

On the 2nd of January, [there would appear to be some mistake in the dates here, as the month of December is quite lost sight of] she was suffering under considerable fever, headache, and loss of rest; but not tenderness of the belly. The vagina and pudenda were excoriated, which produced great distress on the slightest motion. Directions had been given to inject warm water several times a day into the vagina, to remove the putrid discharge; this was not done with sufficient

palliative treatment, the operation of removal by ligature is quite justifiable. Pessaries are useful in chronic cases, of imperfect inversion, which have been overlooked or neglected at the time of their first occurrence.

care, and the neglect of it appeared to be the cause of the present distress. Particular attention was now paid to this point; the purgative medicine was repeated, and an anodyne draught given at bed time.

On the morning of the 3rd, the patient was free from fever; the irritation in the vagina had almost entirely subsided. Dr. Johnson, however, did not think it prudent again to tighten the ligature sooner than the 6th, and from that date it was tightened every second day until the 12th, when the canula came away; and the tumour which was found in the vagina proved to be the fundus uteri and the Fallopian tubes.

From that period the progress of recovery was uninterrupted.

It happened that a larger portion of the uterus was removed in this than in the former case.

In a month after the operation, the patient was able to walk abroad every day; she was free from all morbid discharges, and rapidly regaining strength. The lady having removed to the country, and Dr. Johnson not having afterwards heard of her; we are justified in relying upon the proverb, that 'No news is good news.'

Dr. Johnson accompanies those gratifying cases with some highly judicious remarks. He observes that vaginal examination is the only certain means of diagnosis in cases such as the foregoing; and the consideration that long-continued and profuse discharges which resist the ordinary remedies, will generally be found to depend on organic disease, affords an additional argument in favour of strict examination.

It will be remembered how the case of Mrs. M. was mistaken, though a sort of an examination was made, and how it was afterwards confounded with a polypus.

Dr. Johnson, speaking from extensive experience in these matters, says that it will not be difficult to distinguish inversion from every other displacement of the uterus. But the rules generally adopted for forming a diagnosis between polypus and a partially inverted uterus he does not consider deserving of implicit confidence.

The common directions are, that we should regard it as polypus when the os uteri encircles the tumour; but that in

PROTRUSION OF THE GRAVID UTERUS.

132. The action of the abdominal muscles, as we have seen [12, 17] has a tendency to force the entire body of the uterus, with its contents, down into the pelvis. Now, should this abdominal action be disproportionate with the contractile process

inversion the os uteri forms a part of the tumour itself. Now this is calculated to lead the practitioner astray if the maxim be received absolutely. For, as Dr. Johnson remarks, in both the cases of inverted uterus above related the os uteri surrounded the neck of the tumour, and this in point of fact actually led Dr. Johnson himself, in the first case, as well as Dr. Clarke, to form an erroneous opinion, by relying too much on the axioms of books. It is, therefore, with great satisfaction we copy Dr. Johnson's valuable directions for forming a correct diagnosis in this matter. He says,

"The following circumstances, I believe, will in general serve as marks of distinction. In the partially inverted uterus, the neck of the tumour will be found attached *in its entire circumference* to the inner surface of the cervix uteri, and the finger cannot be passed further than half-an-inch within the os uteri, at any side of the tumour.

"In polypus, on the contrary, the finger may in most cases be passed along the neck of the tumour for a considerable depth into the cavity of the uterus.

"It is said," adds Dr. Johnson, "that an inverted uterus is sensible to the touch, while polypi, on the contrary, are void of feeling. This, however, is a test not to be relied on; for the patient, on whose expressions of uneasiness we are entirely dependant for forming an opinion of the extent of her suffering, will sometimes express as much uneasiness during an examination of polypus, as in a case of actual inversion. The tightening in reality is the only trust-worthy criterion, for its effects are very different in the two diseases. In polypus the pain from the ligature is vastly slighter than that which it occasions when applied to an inverted uterus."

Dr. Johnson, with the manly candour of genius, directs his reader's attention to the original suggester of ligature in chronic

of the uterine substance itself, and, combined with this, should the pelvis be of large dimensions, and the round ligaments of the uterus much relaxed, the whole of the gravid uterus may be forced down very low into the vagina, even before the os uteri had dilated. It has thus happened that the inferior part of the uterus, with the orifice still rigid, has protruded through the os externum, presenting a very considerable tumour between the thighs. Such a prolapsus is fairly attributable, in a great measure at least, to the voluntary efforts of the female prema-

inversion of the uterus, instead of, as some pettifogging practitioners perhaps would have done, indirectly leading the unlearned to imagine it to be an invention of his own. He mentions that A. Petit had the merit of first recommending this fortunate remedy as a writer, though it would appear that another surgeon had (through having mistaken an inversion of three years' standing for a polypus,) applied the ligature with the effect of rescuing the woman from the lingering death that threatened her. The result is stated to have been equally fortunate in every other case as in this decidedly accidental one.

Dr. Johnson adverts to other successful cases of this description in Dublin; but it is unnecessary further to occupy the time of the reader with them after the foregoing specimens.

The great point is that it has, as he observes, been clearly proved that the inverted uterus can bear a cautious and well-regulated application of the ligature, and that the discharges which must otherwise have proved fatal, can thereby be got rid of. Hence, Dr. Denman's principle of our contenting ourselves with mere palliative treatment is happily discarded, and the cheering prospect of permanent cure may confidently be indulged in.

Cases of more extensive inversion may occur, and which may demand a more serious and formidable surgical operation than the application of a ligature; but on these we need not dwell. It is in such cases as those described above the practitioner is most likely to be led astray.

From the cases we have copied from Dr. Johnson's valuable reports, the necessity for an intelligent vigilance on the part of the practitioner during the application of the ligature will be sufficiently inferred.

turely exerted ; as we have said in another place, such efforts influence the abdominal muscles almost exclusively, and manifestly tend to bear down the uterus. Those efforts must, therefore, be restrained, and the horizontal posture must be strictly maintained: The obvious expedient after these precautions is to support the uterus as well as we can by introducing our fingers into the vagina at each side of it ; and if the os uteri be particularly slow in dilating, venesection, and the relaxing draught before mentioned, with other suitable means, must be had recourse to, to promote dilatation. But sometimes, through neglect of such precautions, the uterus, as we have intimated, has made its appearance even beyond the os externum, with the os uteri in a state of rigidity. In such a case, we are told to reduce it as quickly as we prudently can, drawing the perinæum carefully backward, to facilitate the ingress or return of the protruded organ. It may, sometimes, be necessary, before we can accomplish the reduction, to rupture the membranes, and having emptied the uterus of its contents, finally reduce it. A partial prolapsus, or kind of inversion of a portion of the vagina, has also occurred, though the uterus did not protrude. In such a case it has been advised to dip a soft cloth in oil, apply it to the yielding vagina, and thus support it with the hand. Prolapsus of the gravid uterus has even taken place before the commencement of labour ; but then the reduction ought to be more easy of accomplishment. The case, however, will invariably require a horizontal posture, to prevent the uterus from sinking down by its own gravity. After reduction, the recumbent position must be maintained for some time.

TRANSFUSION OF BLOOD.

133. Dr. Burns candidly acknowledges his inability to speak from experience of the efficacy or inutility of this operation ; but we have several well authenticated instances of its having saved the lives of females when reduced to such a state of exhaustion by hæmorrhage, that their surviving without this artificial supply of the vital fluid appeared to be altogether out of the question. Dr. Waller, Editor of the seventh edition of Denman's *Introduction to the Practice of Midwifery*, has entered into the subject very fully. While he objects strongly to the use of stimulants, either previous to or in the early stage of hæmorrhage, he fully admits the propriety of having recourse to them when repeated attacks of that dreadful disorder have depressed the vital powers in an alarming way. Therefore, though he would permit moderate syncope to produce its effect in causing coagula, "in the early stage of hæmorrhage," under judicious restrictions, still, "in those dangerous and repeated attacks of syncope which succeed each other in frightful succession after a large quantity of blood has been lost, stimulants," he says, "are not only proper, but indispensable ; the quantity depends upon the urgency of each particular case. A small portion of ardent spirits," he adds, "may be advantageously allowed in every case of fainting, *if the contraction of the uterus has been previously secured.*" But no stimulant can be so well calculated to remedy the prostration caused by the sudden and extensive loss of blood, and diminished action to which the chambers of the heart are thereby subjected, as replacing that fluid by a similar one through transfusion. Where, therefore, the circulating fluid has been fearfully decreased in its quantity, and, notwithstanding the administration of stimuli to act through the medium of the stomach, the patient continues to sink more

and more, transfusion offers our only chance of averting a fatal issue. Consequently, when we find the pulse failing at the wrist, the action of the carotid arteries becoming quite faint, the extremities cold, the respiration feeble and hurried, we are called upon to try immediately the powerful agency of transfusion in resuscitating the exhausted patient. Transfusion of blood is by no means a novel idea; but at first the process appears to have been conducted with but little congruity with the principles of physiology. Arterial blood, drawn from the carotid artery of some brute, such as a calf, was conveyed by a tube to the arm of the patient, and consequently into the right chambers of the heart. Still there seems to have been some success attendant even on this unscientific method. But no physiologist would now dream of thus superceding the vital action of the lungs, by furnishing them with arterial instead of venous blood; not to speak of the doubt thrown by those who have made microscopic examinations of the blood of various animals, as to the possibility of the globules of the blood of one species being suitable to the ultimate purposes of the circulation in another species. For it is said that the globules of the blood are neither of uniform size nor shape throughout the various families of the animal kingdom, and therefore it is presumed that the globules which would penetrate the capillary system in one animal, and be proper for all the phenomena of assimilation, may fail to do so in a different species, and would, consequently, afford merely a temporary stimulus terminating in death as soon as the transfused blood reached the extremities of the vascular system. Now it is only with the established method of employing the blood of our own species, and that communicated from the venous system of one to the venous system of the other, that we have here to do. We believe that it was to Dr. Blundell, a professor of the obstetric art at Guy's Hospital, that we are indebted for establishing the modern

method of transfusion in Midwifery. He experimented upon dogs in the first instance, and with such success that he ventured afterwards to operate on the human subject in this manner. In August, 1825, he employed transfusion on a feeble and extremely delicate young woman who had given birth to her first child. This experiment was performed in the presence of Dr. Waller, who consequently testifies what he actually saw. This young woman's case was one of profuse uterine hæmorrhage, where other stimuli had failed to rally the rapidly sinking patient. When she was manifestly at death's door, four ounces of blood were drawn from the arm of her husband, and conducted into her vein, with the effect of recovering her without any relapse occurring. Dr. Waller afterwards succeeded several times by employing a similar process. In an apparently desperate case, a transfusion of eight ounces of blood had the desired effect. In this case, two or three teaspoonfuls of brandy were given during the operation, but, from the symptoms that occurred, we have some doubt of the propriety of conjoining such stimulus with transfusion.

THE OPERATION.

134. The apparatus for this purpose is a small syringe, differing from that belonging to a lavement machine only in being of a more diminutive size, and having a sort of funnel for the reception of the blood attached to it. It is commonly made of German silver, or of brass well-tinned, and should be kept perfectly clean, and, of course, never be used for any other purpose than transfusion of blood. To the syringe must be attached either a small silver beak which is inserted into the reception vein of the patient's arm, or, what is decidedly better, a flexible tube with such a beak fastened on its extremity. The flexible tube accommodates itself to changes of position

and unsteadiness of hand, and should therefore be preferred. The funnel has been dispensed with, a small beak with a flexible tube joined to it being inserted into the vein from which the blood is drawn, and made to communicate with the syringe directly. Of the success of this plan—apparently intended to guard against an access of atmospheric air—we can offer no opinion. Perhaps, the only objection to it would be the effect it would be likely to produce on the person from whom the blood is drawn; if it be not severe on him, it certainly would seem an advantage to have the vital fluid communicated as it were directly from the one vein to the other without any alteration of temperature. The apparatus which the author has can be used in either way. The apparatus should be washed with warm water just before using it, but must not be made more than blood warm, lest it might tend to coagulate the blood that passes through it. A thermometer, therefore, should be put into the water to ascertain that it is not above the requisite temperature. The usual method, we believe, is to receive the blood into the funnel, whence it passes into the syringe. It is to be injected into the vein of the patient with a very gentle and cadenced motion of the piston, which sought to be synchronous with the action of the patient's pulse. The only nicety is the preparing the orifice in the vein for the reception of the small silver beak, which latter must be held steadily in its position by an assistant. And the great precaution is to prevent air from entering the vein, as such an occurrence is generally imagined to be fatal. The orifice is thus made:—"The basilic or cephalic vein of the patient is to be laid bare to the extent of an inch or an inch-and-a-half, taking care to divest it of its surrounding cellular membrane. A blunt-pointed bent probe, or a curved and blunt needle, is then to be passed under its lower extremity, in order that pressure may, if necessary, be made on it with the finger, and the

blood prevented from oozing out ; which, by obscuring the orifice, would produce difficulty and delay. The opening should be made in the vein large enough to admit the point of the tubule [silver beak] which is attached to the extremity of the syringe [or flexible tube]. The instrument is made to contain [or inject] two ounces only, it appearing from previous experiments safer to inject a small quantity at a time." Dr. Waller's directions.

135. A free incision must be made in the vein of the person from whom the blood is drawn, so that it should flow from a large orifice, and with sufficient rapidity into the funnel. But, if the funnel be dispensed with, the second beak is to be inserted in his arm nearly as above directed. You must take care that all air be excluded from the beak and tube before you pass the blood into the circulation, for which purpose, about a tea-spoonful of blood in to be suffered to escape from the beak before inserting it into the venous orifice of the patient. The silver beak ought then to be introduced about half-an-inch within the vein, the finger of an assistant keeping it steadily in its place ; and the patient maintaining a semi-recumbent posture, while the flexible tube permits the apparatus to be kept in a proper direction, and enables the operator, with or without the aid of a second assistant, to manage the syringe dexterously. If the second beak be inserted into the arm affording the blood, a second assistant will be indispensable ; and, indeed, even where the funnel is used, support is proper for the arm of the person losing blood from a free orifice. The action of the piston ought just to precede the contraction of the auricle of the patient. The effects of the process must be vigilantly watched, and, if we find the stimulus producing oppression before the full quantity we deem requisite has been introduced, we may pause, and, after a time, renew the operation, allowing an interval of four or five minutes, in order to observe the

effects of the new addition to the circulating fluid. The entire quantity of blood to be injected may vary from eight to twelve ounces, according to the extent of the hæmorrhage the patient has undergone, the amount of her exhaustion, and particularly the effect which the injected fluid has in reviving her. The pulse is found generally to improve materially, more especially after a second injection. And by the pause we also give the person yielding the blood more security from syncope, which it is well known is particularly apt to occur where bleeding is performed from a large orifice and in an upright position. Certainly the person ought at least be allowed to sit down, if not brought still nearer to an horizontal posture, while the blood is flowing freely from his vein; and should also partake at times of some reviving cordial. When a sufficient quantity has been introduced to secure the permanent action of the heart, the probe, or blunt needle, and the silver beak are to be removed from the patient's arm, the edges of the wound are to be nicely adjusted and freed from blood, the separated integument to be brought over the exposed vein, the part to be secured with adhesive plaster, and a bandage loosely applied. Placing the curved probe or blunt needle at the lower part of the incision, together with careful pressure of the assistant's finger, will contribute to prevent the admission of air into the vein, as well as the regurgitation of blood from it. Dr. Waller remarks that although the transfusion process be more used in hæmorrhage occurring after than in that before delivery, nevertheless it may be employed in either case, if the necessity for it be apparent. It may thus prove the means of rendering effectual a dubious labour, when the vital powers were failing before delivery. The authority we have quoted gives an instance of transfusion having had the happiest effect in such a case. The apparatus should always be well washed over with warm water before laying it aside.

136. The patient will require to be well looked after, and her symptoms watched, after every attack of hæmorrhage. After transfusion we are far less likely to be threatened with symptoms of debility, than where the operation was not performed; but an enema is in almost every case a prudential measure. However, we shall hereinafter devote a few additional observations regarding the treatment of women after delivery.

137. There is an occasional irregularity known to occur to the os uteri which should be briefly noticed. We mean a preternatural prolongation of its anterior lip. To this we have given special attention in the chapter where we have treated of hypertrophy of the os uteri. We have been cautioned by authors against mistaking this enlargement of the organ for the placenta itself.

CHAPTER IX.

DELIVERY BY INSTRUMENTAL AID.

138. Though it be a rule amongst cautious and scientific practitioners never to employ instruments for the delivery of a patient without absolute necessity, and not solely with a view of making quick work of it; still cases do arise in which the use of midwifery instruments becomes indispensable, and in which to refuse to have recourse to them would be highly criminal. So cautious, however, are high authorities of countenancing the unnecessary use of instruments, that Dr. Collins recommends the practitioner not to have recourse to them without a professional consultation. It is not always, however, that we can adhere to such a rule. But we should at least be

well convinced that a real case of emergency has arisen before we determine upon delivery by instruments. That emergency may either proceed from a failure of the expulsive powers of the female, a disproportionate size of the presenting part to that of the pelvic passage, or any other cause presenting an effectual obstacle to the success of the unassisted efforts of nature; where the head becomes arrested, and ceases to make progress; or when delay, as in a case of compression of the funis, may prove fatal to the child, it is our duty to interfere in the least objectionable manner that will suffice for the occasion, always giving the preference to that measure, or that instrument which is safest in its operation both for the mother and the offspring, provided it will suffice for the purpose. Midwifery instruments are of various kinds, and have long been sanctioned in practice. Those at present generally employed are, the forceps, either long, or short, and the vectis or lever. These can be used without necessarily placing the life of either the mother or the child in hazard. Then we have the perforator and crotchet or extracting hook, which cannot be used without forfeiture of the life of the child; and which, except in the most imminent danger of the mother dying in the event of delay, are never employed by men of humanity or principle, unless they have ample evidence to convince them that the child has already perished. As to the fillet, that has been justly discarded from practice, so that we need not occupy our space by any further allusion to it.

139. Forceps have been made of different constructions. The short forceps appear to be most generally adopted in this country, but we cannot discover any advantage these present over the long instrument,* except by the blades of the former being free from the lateral curve of the latter, if advantage that really be. All those instruments are now made of tem-

* It has vast power, and demands great caution.

pered steel and ebony, or ivory combined. Dr. Smellie's forceps, those very generally preferred, are not quite twelve inches in length, from the extremity of the handle to that of the blade, when curved, that is in their finished state. The handle occupies about five inches of the length, leaving to the blades very little more than six inches. The blade is about $1\frac{5}{8}$ inch in breadth at its widest part, narrowing gradually as it approaches the handle; not only curved into a somewhat concave form where it is intended to apply to the foetal head, but rendered lighter by its finestra, or the removal of a part of the metal from the centre of the blade, by which its grasp is made more secure while the extent of its pressure on the head is diminished. The blades are sometimes covered with soft leather, but as this not only occupies additional space in the pelvis, where space is sometimes not to be spared, but also absorbs moisture and soon becomes spoiled and dirty, preference should be given to a smooth surface of polished steel. The blades are connected together by what is termed the lock; the latter, however, is very imperfectly constructed in the common forceps, requiring a tying to keep it from separating, and causing the instrument to be of the same size on all heads, however the proportions of the latter may vary. This objection extends, likewise, to the ordinary long forceps, which differ from the short only in being much longer in the blades, and curved laterally, so as to correspond with the form or line of the hollow of the sacrum. A pair of German forceps, however, of the long kind, which the author has in his possession, is free from this serious objection, of not being capable of accommodating the pressure to the size of the infant head. The lock of this instrument is so formed as to require no tying; and, whatever extractive force you may employ, the pressure on the foetal head can be regulated, at the will of the operator, to the least degree requisite. This object is effected by the

very simple contrivance of a sort of polished button, which when the blades are united has the appearance of a rivet, fitting into a nicely-adjusted semicircular groove, which acts as a hinge in permitting the blades to be separated, like tongs, to any necessary extent. From the handle, at each side, projects a concave portion, on which a finger rests in exerting the extracting power, at the same time keeping the lock secure; so that no pressure on the handle itself, in the way of grasping it with the hand, becomes requisite, as in the ordinary forceps; and the fatigue of using it is not a tenth part of that occasioned by the ordinary one, while it is a much more powerful instrument, and one the blades of which cannot possibly come asunder in the vagina. The author's forceps were made from one that was sent over as a present from an eminent professor of Midwifery in Vienna to a gentleman of the faculty in Edinburgh; and the improvement is worthy of the attention of the profession. The blades can be joined or separated with the greatest facility imaginable. Mr. Rooke, Surgical-instrument maker, in this city, has got a pattern of this forceps.

140. When we have to supply either the deficiency or total want of action of the uterus by the forceps, we first must ascertain, by the most precise examination, the situation of the child, directing our special attention to the ears, for these are our chief guide in the application of the instrument. Having dipped the blades of the forceps in warm water, to accommodate them to the temperature of the vagina, and oiled them, we pass one of the blades up to the child's head, two fingers of the left hand having been previously rested on the ear, to serve as a conductor to the blade of the instrument. If we employ the long forceps, with the lateral curve, we should place the convex edge next to the face.* Our examination of the presenting part, which should be very carefully made, will show

* Burns, p. 447.

us how the blades can be most securely and advantageously placed ; and should we find, on making that examination, that a slight change can be effected in the position of the child's head so as to favour the application and operation of the instrument, we should endeavour to accomplish such alteration. Every variety of position will necessarily demand some variation in our mode of bestowing the blades, so that it is almost impossible, and with a practitioner of any intelligence would be unnecessary, to give more than general directions. Having determined on the blade which it is proper first to introduce, and two of our fingers being rested upon the ear, we slide the convex part of the blade up through the hollow of the hand introduced into the vagina, until it meet the fingers which rest upon the ear. It is then pushed cautiously forwards, between those fingers and the head, and the handle so manœuvred by the other hand as to place the extremity of the blade as far forward as will be favourable to a secure hold. It is not by thrusting the blade directly forwards, but by several dexterous and undulating motions we best accomplish this ; and we are to convince ourselves that the first blade lies in the best manner for security and conformity to the fœtal head, before we proceed to introduce the second blade. If properly placed, the first blade will usually be sufficiently retained *in situ*, between the pubis, or the sacrum and the head without our affording it additional support ; but if support be requisite, it can easily be given. When we proceed to introduce the second blade, we must be perfectly aware of the manner in which it is to be turned so as to correspond with the first ; we shall best ensure regularity in this particular by rendering ourselves quite familiar with the instrument in separating and joining the blades repeatedly, remarking the points of the handles that suit each other. As in introducing the first blade, so with the second two fingers are to precede it to the ear, and serve as a guide *

then, by dexterously and cautiously moving the handle, we insinuate the blade between the foetal head and the vagina, until it rest in a corresponding position with that of the first blade; and having carefully adjusted both blades, and fully ascertained, by passing a finger repeatedly round the lock, that none of the soft parts of the mother are in danger of being pinched or included in the instrument, we join the lock, and perfectly convince ourselves by trial that the instrument is secure from liability to slip, before we proceed to extract. A slow and careful procedure in adjusting the forceps will really economise our time, by preventing the vexatious accident of the instrument slipping off the head when we commence applying the necessary degree of force. It is better even to withdraw and re-introduce the blade, when we have committed an error, than to persist in a bungling attempt. At times the position of the head may render it proper to introduce the inferior blade first, and there is one advantage in doing so, namely, that the blade is less likely to be disturbed from its position by the gravitation of the handle, than the superior blade is. But these are matters that may well be left to the taste and judgment of the practitioner, who will at the moment of examination convince himself which is the most convenient plan. It is perfectly justifiable to move the head in a slight degree with our fingers, when we find any obstruction to our gently insinuating the blade; for force in the operation is altogether inadmissible, lest we thereby inflict an injury either on the mother or the child. We should never attempt to introduce the forceps until we have completely emptied the bladder. This is to be made an invariable rule of practice. The ear of the foetus must always be introduced within the fenestra, which will also include some more of the soft parts of the head and face. But the exact points on which the extremities of the blades shall rest are subject to some variation, according to the

position of the head. "In a natural presentation" [21], says Dr. Burns, "the blade does not traverse a line from the vertex to the chin, but rather from the parietal protuberance, obliquely forward on the head, with the vertex considerably beyond the rim. The anterior rim, or that towards the face, traverses the parietal, perhaps a little of the frontal, the squamous portion of the temporal bone, and the zygoma, but the precise spots of the different bones, which the rim may rest on, need not be detailed, nor are they always exactly the same. In general the fenestra includes the protuberance, so also does it the ear, but sometimes the posterior rim merely skirts the ear, perhaps rests on it. The central part of the points is generally on the angle of the jaw; the anterior, rounded, part of the extremity of the rim is on the jaw blade; the posterior on the side of the neck, below the ear. If the head be small, and the forceps a little more advanced, the angle of the jaw is on the end of the fenestra." p. p. 448-9. There are such various positions in which the head may be when it becomes practicable to apply the forceps, that we consider an attempt to describe these with particularity a waste of time. The practitioner must feel his way, and endeavour to place the blades in the most judicious manner existing circumstances will admit of.

The female most commonly is placed nearly in the usual position for delivery, on the left side, when the forceps are about to be used; only she is brought with the pelvis nearer to the edge of the bed, and generally has a female assistant sitting at the other side, in order to let the patient grasp her hand, if necessary, for support. Another female assistant will be convenient, in order to hold up the right thigh in a proper position, while the blades are introduced; and, indeed, Dr. Collins attaches no little importance to our substituting such manual aid for the customary pillow between the thighs, on all

occasions where the practitioner has to introduce his hand for turning, or any other purpose. It is much to be lamented when it is found necessary to place one of the blades over the face of the child, and every legitimate endeavour ought to be made to avoid doing so; but sometimes the practitioner has been compelled to adopt this objectionable method, and has succeeded with far less injury to the face than one would apprehend. It is only when the head is comparatively low in the pelvis that the short forceps are applicable; though the directions usually given are most suitable to them.

142. When we have properly and securely adjusted the instrument and proved it to be sufficiently firm to bear any reasonable extracting force without parting from the head, we proceed to advance the delivery. This we do without any approximation to violence, and with occasional intermissions of our efforts. If there be any expulsive action on the part of the mother, we are to assist the pains by plying the forceps synchronously with them, which will not only make our efforts more effective, but also tend to render the pains more vigorous. If there be no uterine action, we must nevertheless abstain from intemperate hurry. The manner of acting with the forceps is not by pulling continually in one direction, but by somewhat of an undulating movement of the hand, or hands, resembling in some degree the motion of a pendulum, employing barely as much pressure on the foetal head as will suffice to keep the blades securely in contact with it. By coaxing, as it were, the cranium to move in any direction in which it appears to be least restricted, we shall succeed much better than by making a *dead pull*. Dr. Denman observes that, "Throughout the operation, especially the first part, the action of the blade of the forceps, originally applied toward the pubis, must be stronger and more extensive than the action of the other blade." The reason is obvious to a person of any intelligence,

namely, the pubis offers more resistance than the posterior part of the vagina, and by meeting this resistance with undue force we may do serious injury. We must always remember to extract in the line of least resistance, or in that which we find yielding most to our efforts. We should, at our pauses, ascertain the progress we have made; and although if we have properly adjusted the instrument in the first instance, we may succeed in finishing the delivery without making any change with regard to the forceps, still circumstances may render it judicious to withdraw and re-adjust the blades, either in consequence of their having somewhat varied their position, or from the head having changed its place, so as to afford us a more favourable opportunity of grasping it safely than we had before. Every change we can make, toward the time that the head is approaching the os externum, which will prevent the forceps from coming in contact with the perinæum, if our first hold were not as satisfactory as we could desire, ought to be embraced, for the purpose of obviating the risk of laceration. At this moment, the assistance of a person capable of supporting and guarding the perinæum would be valuable, while the operator is entirely occupied with the management of the instrument. And, indeed, such an assistant, both supporting the pelvis and the perinæum, as occasion required, would be not a little desirable throughout the entire operation. But when this cannot be had, the operator must only redouble his precaution and diligence as the head is about to be born.

143. We have been advised in face-presentations to use forceps having the blades more curved at the ends than those of an ordinary construction, as the common instrument is considered liable to have its extremities too separate from the occiput in this case. As when the head descends the face has a natural tendency to turn into the hollow of the sacrum, as

nature orders in natural labours, we must favour this movement with the instrument, turning the handles round in the requisite degree on their axis, and bringing them more forward and upward, when the face arrives completely in the hollow, so that the handle shall then be placed in the axis of the outlet. Here is the time for attention to the perinæum. Now we shall perfectly understand the nature or reason of this turn of the child's face to the hollow of the sacrum, when we weigh the remarks of that late distinguished obstetrician, Sir Fielding Ould, concerning the manner in which the fœtal head acquires its position in the natural presentation. It does so by the chin being turned to, or on, the shoulder of the child. Thus, the side, or narrow part of the cranium, corresponds with the narrow or antero-posterior diameter of the pelvis, while the long diameter of the head, as well as the transverse portion of the shoulders, are so placed as to pass through the transverse or longer diameter of the pelvis. Now as soon as the head has thus passed through the line of least resistance, it naturally assumes its proper position with reference to the shoulders, the obstacle to its doing so being at an end. In the use of the forceps, therefore, dexterity will often be far more efficacious than strength. It will be well to remember as a rule, that the handles are to approach nearer to the pubis, in proportion to the descent of the head. By bearing this in mind, we avoid injuring the perinæum. This rule is founded upon the direction of the outlet of the pelvis. In a word, all the precautions against lacerating the perinæum that we have already so repeatedly insisted upon, become, at least, quite as necessary when we make use of the forceps, as in natural parturition. We must equally wait for due relaxation of the external parts, and must recollect that the instrument has performed its task when it has freed the head from the pelvis, and left the pre-

senting part nothing but the perinæum to contend with. As soon as the head has passed the os externum, the forceps must be removed, and the ordinary measures be adopted.

144. There are occasions where the use of the forceps becomes requisite before the head has descended so low in the pelvis as to be manageable with the short forceps. On such occasions, it is the long forceps that we must have recourse to. Generally speaking, it is where there is sufficient contraction at the brim of the pelvis to oppose an obstacle to the descent of the head, with the (perhaps weak) natural action of the uterus, that we give this aid, deeming it imprudent under the circumstances to delay affording artificial assistance. We never, however, can attempt to use the forceps until dilatation of the os uteri has taken place, and our fingers have room to come in contact with the foetal head for the purpose of adjusting the blades of the instrument. All this we ascertain by the same examination that informs us of the necessity for our interference. In this case, as in that of using the short forceps, the fingers must be carried up to the child's ear. And in applying the forceps before the head becomes well engaged with the pelvis, it manifestly will be requisite for an assistant to steady the uterus and the child for us. There often occurs much difficulty in our succeeding in those high operations, from the direction of the axis of the superior part of the pelvis, and our consequently not being able to bring the handle of the instrument into a favourable position for accommodating our extracting efforts to this axis. If the superior brim of the pelvis be too contracted to permit the entrance of the head, this of course will compel us to abandon the attempt as utterly impracticable, and to have recourse to some of the other more objectionable expedients. But, when no absolutely insurmountable obstacle to our success presents itself, and such cases do occur where the long forceps are worthy of our notice, even a not very favour-


able hold, barely sufficient to bring the head lower down into the pelvis, and afford us an opportunity for a more secure adjustment of the instrument before attempting to perfect delivery, may be a most important object in our proceeding. It is not uncommon, in this high position of the fœtal head, to introduce the blades at the sides of the pelvis, applying one of them on the child's occiput, and the other on the face, the extremity of the latter blade resting upon the chin. We may even thus promote the main object in view. The farther back the point on which we can exert the extractive force, the more do we correspond with the axis of the superior part of the pelvis, and our mode of introducing the forceps ought to be chiefly with this view. The blades, therefore, are placed at the sides, whatever the direction of the fœtal face; and if the forceps have a lateral curve, as most long forceps have, the convex margin of them must be turned to the sacrum. There, however, the very direction of the curve favours the species of force we require to employ, that is to say, it directs the line of action from above and behind downwards and forwards. Dr. Waller, in his directions with regard to managing the long forceps, when the head is high in the pelvis, or just resting on its brim, desires us, when there is any contraction at the promontory of the sacrum, to take care that we apply the instrument over the head in such a situation that the blades may occupy the most roomy part of the pelvis, which will be its lateral diameter. "In a natural presentation and situation," he says, "one blade of the instrument will consequently be placed over the forehead, the other on the occiput. In the introduction of the long forceps," he adds, "it is better to apply the lower blade first, that which lies on the left side of the pelvis: the handle of it should be held in the right hand, and one or two fingers of the left be introduced up the vagina into the uterus in order to guide its direction, and prevent it from becoming entangled with any of

the soft parts of the mother : when properly applied, the point of the blade will be directed upwards and forwards towards the navel, whilst the handle will bear somewhat on the perinæum. This blade is to be secured in its situation by an assistant, whilst the other is introduced ; it will be found more convenient to pass the second blade first of all in the direction of the sacrum, until it meets with the head of the child, when it is with the utmost degree of caution to be gradually shifted, from the posterior to the lateral part of the pelvis, and made to occupy a corresponding direction with that which had been previously introduced, viz., the point directed upwards and forwards, the handle downwards and backwards ; they are then to be brought together and locked, taking especial care that no part of the mother be injured by this operation." Dr. Waller cautions us against undue pressure on the handles. With the German forceps before mentioned no such pressure need ever occur.

145. The vectis is a very favourite instrument with several practitioners, and, when practice with it has produced dexterity, it can be used with good effect. We cannot, however, agree with those who prefer it to the forceps. The vectis somewhat resembles a single blade of the forceps, but it is broader, about twelve inches long, and not curved until three or four inches from the extremity, where it is bent much more abruptly than is the blade of the forceps. It has near its broad extremity a large fenestra about two inches in length. In using this instrument, the fingers of the left hand afford the only antagonist force we can employ. In this way we press the side of the head against the curved part of the instrument while we are extracting, and therefore have not the same controul and independent action with it that we have with the forceps. When we apply it over the jaw-bone, we must be careful of not employing a force that would endanger that fragile part, which is

easily fractured. The occipital bone is a firm and much safer part for it to act upon, and it may be placed thereon as low down, that is to say as near to the vertebræ, as the neck will allow. On account of its sharp curve, it is not so easy to introduce it under the pubis, as at the side of the pelvis, or at the posterior part along the sacrum : from the latter part, however, we can gradually work it round until we get it into a favourable position. We may assist in keeping the vectis steadily applied to the head by pressing with the thumb of the right hand against the instrument, while the fingers of the left preserve the foetal head *in situ*. But the necessity for this fatiguing process will always give the forceps a superiority over the vectis in the eyes of most practitioners, though the latter instrument be in some respects very manageable, and does not require so much care in the application as the other. It may be applied to the lower and posterior part of the temporal bone, at the position of the mastoid process, in addition to the parts before mentioned. With this instrument it is even more necessary than with the forceps to wait for the aid of a pain. The small power we have of using it as a lever may often remove slight causes of arrest, and enable the uterus to proceed effectually in its regular action. But we must be very cautious of employing this *lever* action, lest, by making the soft parts of the vagina our fulcrum, we bruise the patient. Many contrivances have been had recourse to for the improvement of the vectis. Dr. Denman's treatise mentions one, where the instrument was introduced straight, but when it had arrived at the place of its destination it was to be acted upon by a screw in the handle, so as to give it the necessary curve. Dr. Denman gives the following directions for the introduction of the vectis :—" Pass the fingers, or the fore-finger of the right hand, to the ear of the child nearest the pubis, and, introducing the vectis between the fingers and the head of the child, conduct it slowly forwards

till the point of the vectis reaches the ear, wherever that may be. Then, advancing the instrument as if it were a blade of a forceps, carry it on till, according to your judgment, the extremity of the blade may reach as far as, or a very little beyond, the chin of the child, when the line of head, on which the instrument rests, will be in a straight direction from the vertex, over the ear, to the chin of the child; and this is the most favourable position in which it can be placed. Doctor Burns, advising "gentle traction," says, "And if we do in any degree employ it *as a Lever*, by bringing slightly forward the handle, we make our fingers, and not the soft parts, our fulcrum."—We are to wait for the pain, acting during its continuance. When the pain ceases, let the instrument rest; and when it returns repeat the same kind of action; and every time of acting endeavour to lessen the pressure on the soft parts of the mother, with the two fingers, or the inferior side of the palm of the left hand placed in such a manner as to form, in some sort, a cushion on which the instrument may play or be supported; or perhaps a pad of folded linen cloth may be advantageously placed between the instrument and the parts of the pelvis on which it would press. By a repetition of this action during the continuance of the pains, the head of the child will soon be perceived to descend, and the face to turn gradually towards the hollow of the sacrum." Dr. Denman does not approve of the recommendation to apply the vectis towards the hollow of the sacrum.

 Since the note on chronic inversion of the uterus, commencing at page 180, was committed to the press, we have had the gratification of ascertaining, that the ladies who were the subjects of Dr. Charles Johnson's treatment so many years ago, and with whose deeply interesting cases he has favoured the world, are at this moment residing in Dublin, and "in the enjoyment of excellent health." This is most satisfactory information for us to be enabled to lay before our readers. Dr. Johnson's line of treatment, it now appears, has stood the test

CHAPTER X.

DIMINISHING THE FŒTAL HEAD.

146. We have now arrived at a point of practice the most disagreeable to the humane obstetrician, and by which he will feel all his responsibilities distressingly awakened. But the judicious practitioner is not without unequivocal principles to direct and fortify him in the performance of his duty; and however desirable it may be to him, in every case where his judgment and his conscience tell him that he ought to open the head of a child even without that operation obviously placed beyond the pale of safety, and where expediting the infant's fate by a very short period presents the only chance for preserving the life of the mother—however desirable it may be to him, under such circumstances, to have the sanction of a regular consultation for his conduct; still cases may arise where the presence of another member of the faculty would be unobtainable, and necessity would then compel him to come to a decision at the dictation of his own sense of propriety.

147. The case which demands such an operation as that we are about to describe, is where the size of the maternal pelvis is too small to admit of the passage of the fœtal head with or without the aid of the forceps or vectis. Where this case really does exist, the child cannot possibly be born alive whether we interfere artificially or not, and our declining to operate in the only manner we can do so with effect, consigns the mother to a hopeless fate, after fearfully prolonged sufferings, while it adds nothing whatever to the chance of the child but that of letting it endure some additional minutes of dreadful crushing

of 20 years, and can therefore boldly defy all scepticism as to its complete efficacy.

before its short-lived existence terminate. This is a fair view of the case in which a skilful practitioner will determine upon opening the foetal cranium. He sees that to a decided certainty there is no method of saving the child's life; and he feels, whatever the casuist may say to the contrary, that he becomes, morally speaking, the indirect murderer of an adult and responsible fellow creature by deferring the only assistance he can render her. But he must be firmly assured of the absolute necessity for that most painful mode of assistance before he form his resolution. This, therefore, is a question that ought to be in the first place considered, namely, what justifies or indicates the operation?

158. The conjugate diameter, from the front of the sacral promontory to the anterior point of the brim of the pelvis has been so short as not to admit of the entrance into the pelvis of the most diminutive head that ever was known to come alive into the world; and a state of contraction sometimes has been observed that at once demonstrates the utter impossibility of parturition. At times the deformity is so extreme that no resource remains but to bring away the child by piecemeal, or by the Cæsarean operation; unless the abhorrent, and we will say murderous one of suffering the patient to die undelivered, and thus resigning both mother and child to death, where one of the parties might be rescued without any additional evil to the other. The decision to which the most experienced professors have come is, that no child with a head of the ordinary proportions can be born alive where the conjugate diameter is under three inches and a quarter.* Unless the foetal cranium be preternaturally small, or preternaturally compressible, it is agreed by all competent judges, therefore, that the child cannot be brought in a state of vitality through a pelvis of minor dimensions to those above alluded to. But one occasional circum-

* Burns, p. 461.

stance may occur even where the superior part of the sacrum projects considerably forward, namely, the projecting part may not be directly in the centre, but inclined so far to one side as to afford a hope that, by judicious management we might be able to get the larger part of the head to pass through the larger division of the pelvis, while the more compressible parts of the cranium accommodate themselves to the more contracted portion of the pelvic cavity. Of this we spoke [144], when treating of the use of the long forceps. Now it is the bounden duty of the practitioner, after the most careful examination, to give any favourable circumstance of this kind its due weight, and also to endeavour to determine the comparative size and compressibility of the child's head, before he resolve on using the perforator. The compressibility is to be inferred from the openness of the sutures; but as to the comparative size, custom alone can render the tact of the examiner competent to come to any conclusion on this point. In coming to a decision, however, the state of the mother, the amount of suffering she has already been subjected to, the capability of her vital powers to sustain more, the action of the uterus, the manner in which the infantile head is situate,—whether at all likely to admit of aid with either forceps or vectis, and the amount of the efforts to yield assistance that have already failed, must be taken into calculation. On the other hand, cases may arise, as in the event of profuse uterine hæmorrhage, violent puerperal convulsions, or alarming and repeated faintings, rendering immediate delivery indispensable, where there is no time to pause, and these are the cases of the most embarrassing as well as peremptory nature. A preternatural enlargement of the fœtal head, through congenital hydrocœphalus, has not infrequently made ordinary parturition impossible, even where the maternal pelvis was not under the usual dimensions. This is also what is technically termed a “crotchet” case. But it is always a

great satisfaction to the practitioner to know that he has not to operate on a living child, even though he must not shrink from such a deed when unequivocal necessity demands the sacrifice of his feelings; and it is because obstetric auscultation affords him such increased means—we think the only means—of arriving at a certainty in this particular, that we hail the discovery, and the perfection to which Dr. Evory Kennedy has brought its practice, with so much gratification, and so earnestly direct attention to what is laid down on that subject in another part of this work. Not that we operate merely because the child be dead; but we certainly should be far more anxious to strain every point that could afford us the slightest justification for delay while there is not evidence that the fœtus has ceased to exist, than when every ray of hope on that ground has been extinguished, and we have nothing but the duty of abridging our patient's sufferings to sway us. We pity the medical attendant who is incapable of appreciating such a sentiment!

149. We suppose the occasion to have arrived when the practitioner must act upon his decision to diminish the immovable head. Before proceeding to this operation, he must empty both the bladder and the rectum, more especially the former, if that have not been already effected. The os uteri we shall take for granted, is in a sufficient state of dilatation, the waters evacuated, and the fœtal cranium low enough to be within reach of the operator's fingers. In this state of affairs, the perforator is to be carried up with due precaution to the forefinger of the left hand, which we rest, as a conductor, on the child's head. This instrument is shaped not unlike a sharp-pointed scissars, with exceedingly long handles and comparatively short cutting blades, slightly curved somewhat like those of an oculist's instrument. The entire perforator is about nine inches in length, and nearly eight inches of it are devoted to the handles, leaving to the sharp-pointed blades

very little more than an inch. Those blades have a "stop" at each side, to prevent the instrument from penetrating more deeply than is requisite; they are commonly sharpened both at their external and internal edges; but Dr. Denman considered what he called the "cutting edge" to be unnecessary, and he characterises it as "somewhat dangerous and altogether useless;" he says that by having the inner edges blunt we give the instrument "greater thickness and strength." We for our part cannot see any advantage, or great disadvantage, which the sharpness of the inner edges bestows upon the instrument, for it certainly is with the external edges that we perform the operation, and the internal ones can scarcely do mischief without palpable misconduct on the part of the operator. Perhaps it may be imagined that the inner edges help to break up the cerebral mass; but we attach no importance to this idea. However, the operator pierces the cranium with the point of the perforator, close to where he rested his finger to guide it, forcing the instrument in till arrested by the stops. He then enlarges the perforation by separating the blades, which the powerful lever of the long handles enables him effectually to do. Having opened the cranium as much in one direction as he deems requisite, he closes the blades, and changes the direction of the external edges, so as to make a crucial opening, or openings, by again forcing the blades asunder. He acts thus until he leave so much of the cranium cut away, or perforated, as he judges will enable compression to contract the head into a sufficiently small compass to perviate the pelvis. We doubtless should make sure, by passing the forefinger of the left hand round the point of the perforator, that no part of the mother is in danger of being wounded by it; and we must also take care that we do not push the head upwards instead of perforating it. Our first motion, then, for the purpose of perforation, must necessarily be a semi-rotary one, for which the

construction of the blades is well adapted ; and, having convinced ourselves that the instrument has effectually entered the cranial bones, we either separate the handles ourselves, or get an assistant to do so, in order to effect the crucial enlargements of the opening, as before described. This being properly accomplished, we withdraw the instrument with the same caution that we introduce it. It is usual to break down the brain in order that it may come away the more freely, and permit the head to collapse the more readily ; but it does not appear that the doing so is very essential, as the uterine action soon forces the soft substance through the openings we have made. We must in the first place, however, expect some discharge from the foetal head, immediately after the perforation, and consequently are fully prepared for it ; and in the next place we must be aware of the necessity of not hurrying the operation, until we have made the cranial opening ample enough to answer our intention. If, however, the opening be so large as to permit the contents of the cranium to escape, the object is sufficiently accomplished, and, whether we proceed to break-down the brain and its membranes by any instrument, such as the handle of a large spoon, the blade of a forceps, or use the crotchet itself for the purpose, or leave the uterine action to press out the contents, the ultimate effect will be much the same ; but when we find the uterine contraction very weak, we may, if we think that it will facilitate matters, or contribute to cleanliness or convenience, accomplish the evacuation of the cranium at once ourselves in the manner indicated. There was at one time an opinion prevalent among obstetricians, nor is it by any means obsolete, that, after having perforated the cranium, it is advantageous to wait until putrefaction sets in, which it very speedily does in the temperature of the vagina, so as to render the cranial bones more yielding and separable, before we proceed to extract. But

such an opinion is somewhat at variance with the idea of our having been driven to the operation by a sense of immediate necessity for it. The danger of delay would seem not to have been very imminent when we can venture to wait for hours before we proceed to deliver. Where the operation of perforating had been had recourse to at an early period of labour, from manifest contraction of the pelvis clearly proving that it would become inevitable, and perhaps we should add the certainty also of the child being dead, respectable authority would seem fully to sanction such a delay in cases of exceedingly great deformity of the pelvis ; and a foetal head has been left "more than thirty-six hours" in the pelvis after perforation. But in a matter of this description the state of the patient must always point out to the practitioner the proper limits of his discretion. When we do, however, proceed to extract, there is a palpable consistency in separating as much as we can of the cranial bones, so as to diminish the head to the utmost of our power ; but, then, after we have got away the superior bones, the hard unyielding base of the skull is nearly as great an obstacle, as the more compressible superior bones, and there is, besides, no trifling danger of the asperities remaining at the edges of the base doing more injury to the soft parts of the mother, than could the wedge-like compressed bones of the upper part of the head. Nevertheless, we can manœuvre the basis through a contracted pelvis, when we cannot the head from which the superior bones have not been removed : for we can give it a direction in which its edge may come down with instrumental assistance ; but we ought in such case to attend carefully to its passage through the vaginal canal. This operation of removing the bones of the skull is certainly facilitated by delay, Dr. Burns says, "rather by pressure than putrefaction." He adds, "if the parts have become somewhat putrid, or been much squeezed, or the child have been dead before labour began, the

parietal and squamous bones come easily away, and the frontal bones separate from the face, bringing their orbitary processes with them. We have then only the face and the basis of the skull left, and if the pelvis will allow these remains to pass, then the crotchet can be used." The smallest diameter of these remains has been ascertained to be that which reaches from the root of the nose to the chin. In consequence of this, the position of a facial presentation, with the root of the nose directed to the pubis, is counted the most favourable one in which the remains of the cranium can be placed. The manner of attaching the crotchet is by passing it over the root of the nose, and fixing it on the sphenoid bone. Instances, however, have occurred where, even with this diminution of the head, the pelvic contraction was so great as to prevent delivery. But such instances, thank God! are extremely rare. Should there be evidence of such very great deformity as would endanger the patient's life even with the operation under consideration, it clearly ought not to be attempted, the Cæsarean incision being in such case the only available measure. If, instead of bringing down the remains of the head in the facial position, as stated, we bring down the occiput first, in place of having barely about an inch and a half to pass, according to Dr. Burns' estimate, we increase the diameter of the bulk to two inches and three quarters. To bring down the occiput first, we fix the crotchet in the foramen magnum. The neck and the face are thus passing at once. If we take hold of the petrous bone, and bring away the remains of the head obliquely, we still have the petrous bone and the vertebræ to pass together, to the extent of two inches and a half diameter. If we succeed in bringing down the head, it is customary to fix a cloth to it, to enable us therewith to assist the extraction of the body. But, before the latter can pass, it may be necessary to open the thorax, evacuate it of its viscera, fix the crotchet on

it, trying to bring down a shoulder, and then an arm. The abdomen, as well as the thorax, may require to be eviscerated. Where exceedingly great deformity occurs, and particularly where the patient is labouring under disease of the bones of the pelvis, or malacosteon, there is much risk of the patient receiving severe injury in those crotchet deliveries. But the warm and the cold bath, with friction, have been had recourse to, to moderate her sufferings; but we cannot always calculate on successfully doing so; and the child in severe cases has to be brought away in piecemeal. Where malacosteon exists, Dr. Burns advises a compress to be placed in the region of the sacro-sciatic notch, and bound on with a roller firmly round the pelvis and all the upper part of the thigh. The attempt to bring on premature labour, so early as the commencement of the seventh month, affords a much better chance of a satisfactory result, in a well-ascertained case of deformity, than those revolting mutilations, accompanied as they are with considerably protracted suffering, as well as peril, to the patient. The head of the child, three months before the regular period of parturition, is both remarkably yielding and compressible, and does not measure more than two and a half inches, in its lateral diameter. At the end of the seventh month, the same diameter amounts to two inches three-quarters; and it arrives at three inches towards the termination of the eighth month. Thus, we may have an opportunity, by timely precaution, of saving both mother and child; and where the crotchet has become indispensable for delivery of a female in one confinement, it is little if any thing less than criminal not to adopt premature delivery in subsequent pregnancies.

151. We have above chiefly treated of the operation in an unfavourable case, and executed with the ordinary perforator and crotchet. But it is proper to state that other instruments than these have been employed for the purpose; and cases

may occur where the mere perforation, without separating the cranial bones, would suffice. Dr. Waller informs us that he uses a perforator of a triangular shape, with cutting edges, sharpened at the point, and with two shoulders or stops something like those of the scissors perforator, placed at such a distance from the point as will prevent the instrument from penetrating too far into the cranium. With this he cuts or bores an opening. From the great imperfection of the crotchet, which is a blunt hook with a long shank, and a handle not unlike that of a boot-hook, and is liable to loose its hold, by which the soft parts of the mother may be severely injured; a craniotomy forceps has been invented by Mr Holmes, which is represented as preferable to the crotchet in point of security. This craniotomy forceps consists of two dissimilar blades united by a hinge joint. One of these blades is convex, and is placed within the fœtal cranium; it bears some resemblance to a table-spoon. The other blade is concave, so as to fit the external surface of the skull. Both of the blades have sharp teeth, which transfix the cranium in some degree externally and internally, taking so firm a hold of it that there is no possibility of the instrument slipping off. Dr. Davis also contrived an instrument for cutting away the bones of the cranial basis; but it is regarded as likely to do very serious mischief in hands not well accustomed to it. Dr. Denman, with all his protracted and extensive experience, does not appear to have met with cases that presented any formidable difficulties to delivery after reduction of the head; though others have. When Dr. D. had removed as many of the cranial bones as he thought necessary, and taken every available precaution to prevent their jagged edges from wounding the soft parts of his patient, his only study, in using the crotchet, seemed to be to fix it securely in whatsoever part most conveniently presented itself to him. He thus expresses himself:—"I have not found that, in cases

of this kind, I have acted from preference for fixing the instrument in this part or that, or in this or that manner; but, giving myself time to reflect, the exigency of the case has dictated what I ought to do, so that I am not solicitous about any particular method." Sometimes, when he had removed the bones, he has grasped the cranial integuments in his hand, and has brought down the head by pulling these in the proper direction. At other times, when he could introduce a hand into the uterus, he turned the child, and delivered by the feet, eviscerating both the thorax and the abdomen when necessary. But when we find it requisite to open the thorax, we must beware of leaving the ribs in such a state as to be in danger of projecting, and coming in contact with the vagina, for we might thereby do terrible injury to the mother. As the patient is now the sole object of our solicitude, we must devote the most unintermitting attention to her safety, and not accelerate the process in any manner inconsistent therewith. To guard the ordinary crotchet from slipping, the left thumb should be pressed against the shank of the instrument, so as to keep it firm in its attachment to the part of the fœtus we have fixed it on; and two fingers resting on the cranium, near the hook, may shield the vagina. Dr. Denman says that he has, in order to dispense with the crotchet, substituted the forefinger of either hand, armed with a glove, for that instrument, and that with the finger bent into the form of a hook he has been able to afford sufficient aid to the expulsive efforts of the patient. But one would be almost disposed to suspect that such aid could scarcely have been efficient unless the case were one to which a long forceps would have been as applicable as a perforator. Violent traction, it is almost unnecessary to observe, is not admissible in those cases; and though the force we employ may not at first appear to make any impression on the resisting body, still we are to persevere with merely that degree of force, rather

than precipitately augment it: under the impression that the resistance will gradually give way to our persistent though moderate efforts, aided by uterine action. Neither is our traction necessarily to be unremitting until we have accomplished delivery, for we may frequently find it prudent to pause, so as not to exhaust the patient, and also for the purpose of accommodating our exertions to the progress of her pains. The placenta will, probably, be expelled in the usual manner; but should it require our assistance, the same principles are to be observed in affording it as those described the proper place (99). After delivery, and for some time subsequent thereto, we are to pay attention to the manner in which the patient's bladder performs its functions, and introduce the catheter whenever it becomes necessary, as it is not uncommon after instrumental deliveries to have that organ somewhat impaired in its action, and bad consequences have often resulted therefrom when overlooked. Therefore, the catheter ought to be used, unless we have satisfactory evidence of its not being necessary.

OF BRINGING ON PREMATURE LABOUR.

152. We have spoken in a preceding paragraph of the propriety of bringing on premature labour in those cases where we have unquestionable evidence that the pelvis is too contracted to suffer a mature child to be born alive. When we have made up our mind to rescue both mother and child from the afflicting operation just described, by bringing on the pains of labour at a period sufficiently early for the purpose; the means by which we accomplish that object are, the dilatation of the os uteri, and piercing the membranes, to admit of the evacuation of the liquor amnii, and the gradual shrinking of the uterine fibres, of which we have repeatedly spoken.

These measures are followed by labour pains, but at uncertain periods after the operation differing from a few hours to several days. To dilate the os uteri, which obviously must be the first step of the process, we proceed by introducing the finger within it, and detaching a part of the membranes from the contiguous cervix uteri, dilating the os with the requisite patience and gentleness. An instrument, however, called a ball-forceps, has been used for dilating the uterine orifice. This instrument we introduce between the lips of the os uteri, as soon as we have made room for it with the finger, and then cautiously proceed very gradually to distend the lips with it. The sensation to which the use of the ball-forceps commonly gives rise is one of slight uneasiness in the back, but not so severe as to amount to positive pain. Generally it is better to dilate the os uteri by repeated efforts, at the end of some (say twelve) hours, than to do it at a single operation. At the commencement of the seventh month of pregnancy, the earliest period when we can hope for the birth of a child likely to survive, there is a distance of about an inch and a half between the internal surface of the os uteri and the commencement of the membranes, and this short canal is filled up with a substance that has not inaptly been compared to "unclarified jelly." This substance must be removed before we can get at the membranes to perforate them, and the gelatinous cylinder, if so we may term it, is not above an inch and a half broad at its flattened extremities; so that it is evident we shall have to effect some dilatation of the cervix uteri before we can properly introduce the fingers for the purpose of detaching a part of the membranes. It is probable this proceeding will be enough to bring on labour, without further interference, and we are, therefore, to allow some time to elapse, to ascertain its efficacy in exciting uterine action. But if we find the foregoing process insufficient, the membranes must next be perforated, and

the waters suffered to escape. For the purpose of piercing the membranes, a sharpened quill has been used, or a trocar and canula specially made for such an operation. We should remember, however, that we have to guard against wounding the child, should it happen to be close to the membranes, and, directing our precautions to this object, we cannot be at a loss to know how to proceed. But we really think Dr. Mason Good's advice, to pierce the membranes with a metallic catheter, and at the side, worthy of preference to the operation with the trocar. There cannot be any precise period fixed for the accession of labour after the perforation of the membranes. The interval may be so prolonged as six days, but it seldom exceeds four days, and sometimes is not more than a very few hours. If a rigor come on before the pains, it is customary to give the patient an opiate.

153. As some women have been known to go on in a satisfactory manner until pregnancy arrived at a certain period, and at that precise period uniformly undergo some change that proved fatal to the child; it has been proposed to anticipate that period, which not unfrequently closely approaches to the regular close of utero-gestation, and thus to bring on labour artificially at a time when we have evidence of the perfect vitality of the child. To this there can be no reasonable objection, and where the habit has apparently become established to the almost certain destruction of the offspring, it seems to be our duty, and decidedly that of the mother, to act upon the proposal. The steps to be pursued differ in no respect from those we have described above; and, when premature labour has been excited artificially, the practitioner's subsequent measures in conducting delivery will differ in no respect from those adopted where parturition was spontaneously effected.

CHAPTER XI.

ON THE EVIDENCES OF PREGNANCY.

154. Though this be a subject rather related than actually essential to the design of the present work, which is intended in a great measure to be confined to the practical or operative portion of the obstetric art, as applied to parturition ; still evidence of pregnancy is a branch which we do not think it advisable to pass over altogether, because any practitioner in Midwifery may occasionally be called upon to pronounce an opinion, even in judicial cases, as to the existence of utero-gestation. We shall therefore devote a limited portion of our space to the consideration of the evidences of pregnancy which have occupied much of the attention of the profession. And here we have to make our acknowledgements for the important information we have derived with regard to this branch of obstetricity, from that excellent and lucid Treatise, by Dr. Evory Kennedy, entitled "*Observations on Obstetric Auscultation, with an Analysis of the Evidences of Pregnancy, and an Inquiry into the proofs of Life and Death in the Fœtus in Utero.*" No obstetrician ought to neglect consulting Dr. Kennedy's demonstrative volume, on this curious and interesting subject : for it will be found replete with sound reasoning, appeals to conclusive facts, and every possible precaution against fallacy. But as that Treatise reaches nearly to the dimensions of the present volume, we cannot be expected to embody in our pages more than a very brief digest of Dr. Kennedy's most important conclusions.

155. On the common, or long-observed evidences of pregnancy, we have to remark that they are mostly very equivocal

in their nature, and that not one of them taken singly, often not even several of them combined, can be implicitly relied on. Many, if not all, of the long-recorded signs of pregnancy may arise from morbid conditions, or partial derangements of the frame, altogether unaccompanied by uterine impregnation; and the late disgraceful mistake regarding the state of poor Lady Flora Hastings is quite enough to give a feeling of great caution to medical men how they decide on the principles of the old school. It will suffice, therefore, to make a short reference to the symptoms formerly relied on. The first in order of these certainly is the interruption of the menstrual discharge at the usual periods of its occurrence. This is a very frequent and almost uniform incident in pregnancy; and it has been a question with physiologists whether it be possible for a female to have a genuine return of the catamenia at any period of utero-gestation. Probably it is not possible for genuine menstruation to take place during pregnancy. This is our decided opinion. But then we may have a vaginal discharge, so strongly simulating the menstrual secretion as to present much practical difficulty as to our determining the point; and every physician knows that numerous cases of amenorrhœa present themselves daily in practice where not the most distant idea of pregnancy could be entertained. This sign, therefore, is indisputably an equivocal one. The next in order, and that which perhaps in conjunction with the preceding sign attracts the attention and influences the opinion of the female, is what is called the "morning sickness." The sympathy between the stomach and the uterus is of very frequent occurrence in pregnant females, chiefly at the early period of utero-gestation, or that intervening between impregnation and the sixteenth or seventeenth week, when the sensation of "quickening" is ordinarily experienced, from the uterus commonly rising out of the pelvis at that date. Yet the "morning sickness," and any other

dyspeptic symptoms accompanying it, may unquestionably be simulated by other diseases distinct from utero-gestation. Then we have enlargement and tenderness of the breasts, together with a considerable developement of their veins, of the nipples and their glands, and of the dark areola surrounding them. Now each and all of these, it has been fully proved, may take place without pregnancy; and Dr. E. Kennedy has recorded a curious instance, showing that even a secretion from the mammary gland, having the appearance of suck, may be present where the female was by no means pregnant. He says, in the work adverted to, p. 53, "mere titillation of the breasts or nipples may produce a secretion in the gland: it is not unfrequently observed in infants; and I met with an old midwife, of sixty-five years of age, who could at pleasure extract milk, or a fluid resembling it, from her breasts. This I have seen her do, and she assured me she was in the habit of suckling her grand-children." Implicit reliance, consequently, cannot be placed in the foregoing symptoms of pregnancy, though they be, one and all, entitled to attention, and much of their fallacy will be removed by the skilful practitioner, who will notice the accompanying circumstances, and thereby obtain a trustworthy diagnosis. But those signs may be absent, or seem to be so, during pregnancy, and, therefore, are fallible tests both negatively and positively. Then, as to abdominal enlargement, this every body knows may be a consequence of dropsical disease, it is indicative even of flatulent distention of the uterus itself and certainly of ovarian disease, or of fungoid and other morbid growths in the organ. Swellings of the lower extremities, or varicose state of their veins, are equally fallacious. So is the oft-relied upon appearance of the urine. As to this test, Dr. Kennedy informs us that he had ascertained that the urine of virgins was almost equally capable of yielding the "white, flaky, pulverulent, grumous matter," as that of pregnant

women and nurses. He says that he instituted a strict scrutiny of this, "When the conclusions arrived at on this subject were, that a white flocculent precipitate, similar to that described, subsided spontaneously after twenty-four hours, not only from the urine of pregnant women, but also in equally great quantity from that of a virgin *ætat* 14, and that of a woman nursing two months." p. 57, *op. citat.* Also, as to examinations per *vaginam*, these have often proved equally deceptive. Nevertheless, as they afford a test of importance in connection with co-incident signs of pregnancy, and often are had recourse to, we shall here avail ourselves of an extract from Dr. E. Kennedy's description of the forms usually assumed by the *os uteri* and *cervix* in various stages of pregnancy, as well as in the unimpregnated state of the uterus:—"In the virgin, the neck of the uterus (which is the part that must principally demand attention) is fleshy, firm, and hard to the feel, of a projecting papillary form, measuring about two-thirds of an inch in length. In the female who has borne children, this part of the uterus, although it never regains its primitive form and structure, approaches so nearly to it in many cases, that it would be next to impossible, on vaginal examination, to pronounce whether the individual had ever borne children; and even when removed from the body, it would often be attended with difficulty. At the same time, the neck of the uterus often remains, after child-birth, broad, short, and flabby, with the *os* gaping, and never regains its original form. This is more particularly observed where the woman has borne a number of children, and that in quick succession.

156. "After the act of impregnation, the orifice of the uterus, which before gaped, is sealed by a peculiar glue, or adhesive matter. According to Leveret, its two lips now form an equal plane, whereas, before, one labium was prolonged downwards below the other. Stein states, that the orifice,

which had been of a triangular form, now becomes circular. Granting the accuracy of these observations, the difficulty of ascertaining, with certainty, such nice distinctions, precludes in a great measure their general practical application. We must therefore look for some less equivocal changes.

157. "In the first months, the volume and weight of the uterus increasing, the neck is pressed somewhat deeper into the vagina, which renders it apparently more prominent. This arises merely from its being more accessible to the finger on examination; afterwards, as the uterus rises out of the pelvis, the neck is raised up out of our reach, giving the idea of a shortening, by this change of position. The neck and os are also said to be sensibly softer to the feel soon after impregnation. There is really little change in the length of the neck until after the fifth month, when it begins to shorten; it now feels much softer, and the body of the uterus, where it joins the neck, becomes somewhat developed. The neck is sensibly broader in the sixth month; more so in the seventh; in the eighth there is very little neck in general remaining; and at the period of delivery it is very nearly obliterated, scarcely a vestige of the once prominent neck being perceptible; meanwhile, the development of the fundus and body of the uterus has been proceeding in proportion. Now, the above is a description of the changes that usually take place in the neck and body of the uterus, yet these changes are by no means implicitly undergone in all cases, as in some, 'the neck is found as long in the eighth month as it is in others at the sixth;' and on the other hand, 'it is as much altered at the fourth month in some women. as in others at the sixth.' Again, cases will occasionally be met with in the seventh and eighth months, in which the neck of the uterus may be found unobliterated, and projecting a considerable way into the vagina; this is particularly observed in women with their first children.

158. "The developement or enlargement of the body of the uterus must also demand our attention. In the unimpregnated state, if the finger of the examiner be passed up between the os uteri and the pubis, it meets with, at least, no solid resistance: the bladder and soft parts here yield to his pressure, and if the pelvis be shallow, and the patient thin, the fingers of the left hand, pressed firmly down into the pelvis from above, behind the pubis, may be even distinguished by the finger of the right hand introduced into the vagina. Not so, however, in the impregnated female; as here the body of the uterus, becoming enlarged, fills up this space, and the finger on being introduced, meets with a firm resisting tumour, the enlarged body of the uterus. Of course, the more advanced the pregnancy becomes, the more distinct will this sign be. We shall be assisted in this examination by pressing the left hand on the tumour, if any be observed, in the pelvis or abdomen, thus pushing down the uterus within our reach, and ascertaining how far moving the tumour above will alter the situation of that felt in the vagina, and particularly the neck of the uterus, or communicate the sensation of its being the same body above and below; and also what effect moving the tumour and neck below shall produce on that felt above. But, by way of caution, Dr. Kennedy adds, "The fact is, that in diseased enlargements of the appendages of the uterus or the neighbouring viscera, such, for instance, as diseased ovary, or distention of the fallopian tube, the alternate motion of the uterus and tumour above and within the pelvis will often produce the corresponding motions alluded to. However, admitting even that by these means we have ascertained it to be an enlarged uterus, may not this organ be enlarged by a variety of causes independent of pregnancy? May it not be tubercular? contain hydatids, water, air, mole, or even polypous growth?"

159. A method of manual examination has been recom-

mended, by which the presence of the fœtus in utero is much more likely to be tested than by that we have last mentioned, or indeed than by any of the numerous signs alluded to by authors which we have not deemed it useful to recite, inasmuch as they are decidedly equivocal. This method is detailed very minutely by Dr. Kennedy; but we must content ourselves with pointing out the principal features in the description. By this plan, the fœtus is put in motion, and that motion may be either strictly passive, or active. In producing the passive motion, the finger of the examiner is pushed suddenly upwards “against the anterior part of the uterus between the os uteri and the tpubis.” By this manœuvre, we occasion a degree of motion to the floating fœtus, whether living or dead, causing it to ascend in some degree, so that it descends “with a slight shock,” arriving at the spot whence it was dislodged, and communicates an impulse to the finger. We succeed best in this experiment from the fifth to the seventh month, and when the child’s head is at the inferior part of the uterus, i. e. presenting. Two circumstances unfavourable to this test may be present, namely, so narrow and unyielding a state of the vagina as to render it difficult for us freely to employ the finger for the purpose, or the accident of the child being situated so high in the uterus as not to come in contact with the part which meets the examining finger. This mode of examining is called by the French Obstetricians *abattement*. In the event of a moveable tumour in the uterus it may prove deceptive, as a test of actual pregnancy, but is, however, a useful one, and strong presumptive evidence. As to the test of active motion, the fœtus thereby is made to evince not only its presence, but also its vitality. The trial is thus put in practice:—The female is placed on her back, with the trunk somewhat flexed upon the pelvis, and the legs drawn up, so as to relax the abdominal parietes. The hands of the practitioner are then to be extended over the

uterine region, and a slight pressure made with the tops of the fingers. Dr. Kennedy assures us, that "in this way a sudden jerking motion may be perceived at some part of the (abdominal) tumour, produced by the change of position of one or more of the extremities of the fœtus, and evidently the effect of muscular action." This test succeeds better in advanced pregnancy, when the child has decided vitality, than in the early stages where the phenomena of life are more circumscribed and feeble. By dipping the hands into cold water before we apply them to the uterine tumour, we have an increased prospect of succeeding in this test. But Dr. Kennedy admits that it sometimes unaccountably fails to elicit fœtal action. Another method of producing passive motion of the fœtus, and by the French termed *ballottement*, has been had recourse to, and is far less objectionable to females than the *abattement*, which, as we have seen, requires the introduction of a finger into the vagina. The *ballottement* is performed by placing the female in the same position we have last described—that for ascertaining the active motion of the fœtus. The fingers of each hand are then extended, and applied against the lateral parts of the abdominal tumour, and thus we give an alternate impulse, from each side, to the uterine contents, remarking the sensation which the floating mass communicates to our fingers. To promote freedom of motion, the abdominal muscles ought to be well relaxed. From the fifth to the seventh month the *ballottement* promises the most success. In fat patients, or where the abdomen is flatulent, or its parietes peculiarly tense, we find difficulty in producing the desired effect; as also in dropsical cases; or even where there is an insufficient supply of liquor amnii in the uterus to contribute to the free motion of the fœtus. Unfortunately, also, some morbid growths, such as an enlarged ovary, may present a somewhat similar sensation as a fœtus in the *ballottement*. But a dexterous and experienced examiner

probably might succeed in establishing a diagnosis in such a case.

160. We certainly have observed certain characteristic changes in the countenances of pregnant women, which we have generally perceived to be trust-worthy indications of utero-gestation. It is not easy to convey to another an exact idea of that cast of countenance which has impressed itself on our mind as worthy of consideration as a test. But we may describe it as a peculiar sharpness, and aspect of anxiety of the visage, differing both in degree and expression from that which actual disease occasions; there is a pointed appearance of the nose, together with some slight constriction of the muscles of the face. This certainly is far more perceptible in some females than in others; and it, perhaps, demands that one should be familiar with the countenance of the individual in a non-pregnant state to appreciate it. But we can fully answer for it that the cast of countenance to which we advert has very often proved a veracious monitor to us. Yet it is only fair to add, that we know a lady manifestly pregnant at this moment, whose visage, so far from being sharpened, is evidently plumper than it was before utero-gestation.

161. The sensation which the female experiences at the period of "quickening" has long been regarded as one of the surest criterions of pregnancy. This sensation is by many attributed to the change which occurs in the position of the gravid uterus when it emerges from the pelvis, and thus affords a more unrestricted opportunity for the motions of the fœtus, at least for their being perceived. The period at which this occurs is not precisely the same in all cases of pregnancy, for with some females it takes place several weeks earlier than with others. However, the sixteenth week after impregnation is the usually assigned period of "quickening;" but much in this matter seems to depend on the capacity of the pelvis. When

“quickenings” does take place, some very sensitive females experience very marked sensations, frequently of an hysterical character. They complain of an unusual motion in the inferior part of the abdomen, occasionally attended by fainting; and a small quantity of blood is said to have often been discharged on such occasions. These symptoms are usually followed by an abatement, or entire cessation, of the “morning sickness.” But in several pregnant females no sensation of “quickenings” has been at all experienced, even where it was obvious that the uterus had risen out of the pelvis; while other women have insisted upon it that they had perceived the “quickenings” symptoms, at a time when there could be no doubt whatever that no pregnancy existed. Therefore, the criterion of “quickenings” must necessarily be ranked among the fallible tests of utero-gestation; and it, evidently, can be of no utility whatever in cases of simulated pregnancy, where the female has an interest in deceiving us, and therefore cannot be admitted as a witness.

162. The erroneous sensations which some women have mistaken for “quickenings,” are attributed by Dr. Kennedy to the “sudden escape of a portion of air from one part of the intestines to another;” and no doubt this is sometimes capable of producing a very strong and painful feeling. The same authority has also known “the pulsation of the (abdominal) aorta to impose on females so firm a belief of the presence of a child in the uterus, as to baffle his utmost endeavours by argument to undeceive them.” He narrates in his amusing and instructive work instances in which those deceptive sensations occurred; but we shall here merely observe, that they are to be looked for where dyspepsia complicated with hysteria is present.

OBSTETRIC AUSCULTATION.

163. Having noticed several of the ordinary but more or less fallacious symptoms relied upon as evidences of pregnancy, we now come to a test of a far more credible character than any, or perhaps than the entire aggregate of those of which we have spoken :—That test is Auscultation. This may be exercised either by applying the naked ear to the uterine region of the abdomen, when it is technically termed *immediate* auscultation, or by employing the instrument called the stethoscope, when it is styled *mediate* auscultation. Both of these methods have had their strenuous advocates, some preferring the one to the other. But it would appear that both possess certain claims to our attention, and that neither should be excluded from practice out of prejudice to the other, for, under certain circumstances, the one of them may be found more answerable to the case, than the other. The stethoscope, however, where it is found to answer, is certainly a shade less objectionable to the female than the *immediate* application of the practitioner's ear to the abdomen, and should be first tried, substituting the naked ear if the previous means do not prove quite satisfactory.

164. Our object in auscultation is to obtain evidence of the existence of a *living* fœtus in utero ; for if the child be not alive auscultation is a less decided test of pregnancy ; but where the fœtal heart furnishes evidence, it is beyond comparison the most satisfactory and conclusive that we can possibly obtain. Dr. Kennedy's work on the subject presents us with instances enough of the unequivocal success of obstetric auscultation (when all other means of examination had failed,) to overcome the scepticism of any candid person that will give the book a fair reading. We shall extract one case from a considerable number given by Dr. Kennedy, and all conclusive as to the

marked utility of auscultation. We are induced to select the case we do from its affording one amongst many proofs of the curious fact that impregnation may take place without rupture of the hymen:—"A remarkable case of this kind," says Dr. Kennedy, "occurred to me in March, 1831.—A respectable man, a servant in Mr. B.'s family, waited upon me in company with his niece, an interesting and innocent-looking girl, of about twenty-two years of age. He stated that his mistress was anxious to take her as her waiting-maid, but, as an apothecary, who had lately prescribed for the girl in a bad state of health, pronounced her pregnant, he brought her to me to ascertain the fact, or rather to disprove it, for of her innocence he appeared to be perfectly satisfied. On questioning the girl, at first, in her apparent innocence, she seemed quite amused with the imputation, asking me, with the greatest *naiveté*, whether she could have become so in her sleep? On persisting in my inquiries, however, she denied in the most solemn manner the most remote possibility of such being the case, and that with such seeming absence of guile, as caused me to doubt whether her character had not been unjustly called in question. This idea was heightened when I could discover no abdominal enlargement, or sensible change in her breasts, and on her denying her having had any sickness of the stomach; she admitted that her menses had not appeared for three months. What struck me, however, as very curious, was, that, on my proposing a vaginal examination, in place of its being objected to, as it almost always is, and particularly by those who are unmarried, she acceded to it with alacrity, and appeared almost to seek it; the reason of this soon became obvious enough, as on my endeavouring to insinuate the finger within the vagina, it was completely stopped by the most perfect hymen that ever came under my observation, and every attempt to proceed with the examination, and get the finger up to the uterus, was attended

with such distress and irritation as to oblige me to desist. Auscultation was now had recourse to, and the foetal heart's action and placental *souffle* were detected. On my informing her that I had quite satisfied myself of her being pregnant, she still persisted in her denial, and laid great stress on the circumstance of her parts being perfect and uninjured. I now perceived the drift of her conduct in submitting so willingly to the examination, and that the girl herself, from this circumstance, was confident that she could not be pregnant. However, she was undeceived in this respect, and at length confessed that a married man had once had connexion with her, but that he had taken precautions to avoid injuring her, and assured her, whilst she remained perfect in this respect, she could not become pregnant, a fact which she implicitly believed. In this they were both deceived, as she was delivered in the Lying-in Hospital, on the 24th of August, 1831, of a full-grown female infant."—pp. 31–32.

165. The foregoing case is not uninteresting to the physiologist. But let us, without following up so curious a fact with the reflections which suggest themselves, now proceed to a description of auscultation of the uterus, and the results it offers. There are two sounds which we endeavour to detect in this examination, namely, first, the *bruit de soufflet*, proceeding from the spot where the placenta is placed, and, second, that caused by the rapid pulsation of the foetal heart. The first sound is synchronous with the maternal pulse, and presents some variety in the noise it emits. Sometimes it is like the "*bellows' sound*," described by Laenec, as resembling the continuous murmur caused by the applications of a large shell to the ear; at other times it is somewhat like to a faint sawing or rasping sound; occasionally it presents more of a hissing sound; and in very rare cases it has been compared to the cooing of a dove. "A more frequent peculiarity to be noticed,"

says Dr. Kennedy, "is a strange drone, resembling that of a bag-pipe accompanying the sound, but yet not interfering with it. The most constant form we meet with, however, is a combination of the bellows or sawing with the hissing sound, commencing with one of the former, and terminating with the latter; and this is in general so protracted, that the last *souffle* is audible when the subsequent one commences."

166. Now one of the principal points to notice is, that this *bruit de soufflet* of the placenta must be exactly synchronous with the maternal pulse at the wrist. A variety of conjectures have been submitted with regard to the specific cause of the peculiar sound we have just described, which every surgeon knows to be likewise a phenomenon connected with arterial aneurism. We shall not enter into the discussion to which this subject has given rise, farther than to express our opinion that Dr. Corrigan, of this city, is quite correct in attributing the *bruit de soufflet* "to the currents proceeding with the passage of the blood from a narrow orifice into a wider tube;" as the structure both of the aneurismal lesion, and also of the vessels in the placental circulation, bear out this idea. Dr. Kennedy concurs in this opinion. The placental *bruit de soufflet* is heard in a much earlier stage of pregnancy than is the sound of the foetal heart; and several practitioners think that it is more readily recognized by the application of the naked ear, or *immediate* auscultation, than by the stethoscope. In either method, however, it often requires patience and repetition to make sure of it. The placenta is somewhat uncertain as to the exact spot of its adhesion, for sometimes it is applied, as we have seen, to the os uteri itself; and at other times will be found towards the fundus uteri. See a note on this subject. We may, therefore, have to try almost the entire surface of the uterine region before we can hit upon the precise place whence the placental sound proceeds. But Dr. Kennedy, who has

made obstetric auscultation a regular study, and has very great experience in it, tells us (page 70), that "in the lateral parts of the uterus where the distribution of the vessels resembles that in the placental part of this organ," a somewhat similar sound can be heard. But the *bruit de soufflet* invariably ceases with delivery, that is to say, after uterine contraction has taken place. Sometimes the *souffle* is audible over a very considerable part of the uterine region; and occasionally other sounds, proceeding from causes different from the placenta, are liable to deceive the incautious examiner, and in a degree to interfere with our perception of the real *souffle*. "The respiratory murmur is sometimes conducted from the lungs across the thoracic to the abdominal parietes, and may embarrass, but can hardly deceive us, if we be acquainted with, and prepared to, expect it. The sonorous *rale* resembles somewhat the placental sound, and is occasionally conducted over the abdomen in the same way as the respiratory murmur. We can invariably distinguish this by its corresponding in frequency with the respiration as calculated by the heaving of the chest, whilst the *souffle* is synchronous with the pulse at the wrist, or, in other words, we ought, generally speaking, to count three placental sounds for one respiratory or sonorous *rale*. It is only when the respiration is preternaturally hurried that we can run the slightest risk of being deceived in this way; but even then we may rectify any mistake at once, by tracing the adventitious sound to its thoracic source, finding it become more and more distinct as we approach the lungs. At times the passage of flatulence through the intestinal canal may confuse the incautious; but attention to the pulse will suffice to prevent error in such cases. The occurrence of a *bruit de soufflet* from the abdominal aorta, or some of its branches, may prove more deceptive than the respiratory murmur, inasmuch as the former is synchronous with the pulse. When this aortal *souffle* does

occur, which is but rarely, it is usually occasioned by the pressure of the stethoscope on the artery in question, so as to cause a partial diminution of the diameter of the vessel, and with it the murmuring sound, but this will cease on the undue pressure being removed, and the normal state of circulation in the artery restored. Dr. Kennedy, however, mentions a case of the aortal *souffle* having been occasioned by the pressure of a considerably enlarged liver on the artery; but in this case the *souffle* was "confined to a small spot immediately over the aorta." Laenec, besides, assures us, as Dr. Kennedy observes, that "when the bellows' sound exists in the aorta, particularly the central part of it, there is always a marked affection, that of disorder in the nervous system, viz., agitation and anxiety, faintings more or less complete, and produced by the slightest causes, and an habitually quick pulse." In the very rare* case of the placenta being attached to the posterior part of the uterus, there may be a difficulty in discovering the *bruit de soufflet*, but this is to be overcome by our making the female change her position, so as to enable us to explore the iliac and lumbar regions, at each side, and as near to the spine and back as we can, until we succeed. The sound is occasionally more or less intermitting, but it is particularly so during the uterine contraction attending a severe pain, and should therefore be sought only during the intervals between pains when we explore at the time of labour. In all cases of obstetric auscultation, the patient should have a sheet thrown over her, as she lies on the bed, for this does not in any material degree interfere with the transmission of the sound, while it obviously is indispensable to delicacy. The position, of course, as before has been intimated, must be varied, when necessary, in conformity with our views in seeking the place where the placenta is attached.

* Not so rare, perhaps, as is imagined.

167. If the period have arrived when the pulsation of the fœtal heart can be discovered in conjunction with the placental *souffle*, our evidence of the presence of a living child becomes very complete. But this period, as we have intimated, must be a comparatively advanced one. Not that a very distinct and unequivocal *bruit de soufflet*,* evidently proceeding from the

* A concise, but highly instructive "Treatise on Obstetric Auscultation," by Dr. H. F. Naegelè, has been very ably translated from the German by Charles West, M D. This little work we have perused with much pleasure; but though there be points in it that deserve to be adverted to, we see no reason to regret, after examining its pages, that we have made Dr. Evory Kennedy's volume our text-book on the subject we are now upon. Dr. Naegelè gives the term "Uterine *Souffle*," or "Uterine Sound," to the placental "*bruit de soufflet*." This term has not been adopted by him without involving a theory, namely, that the sound is actually caused, not by the circulation in the placenta itself, but by the vessels of the uterus. He remarks with great propriety, and frequently dwells upon the important practical fact, that the "uterine sound" may remain distinctly perceptible after the death of the fœtus, and until uterine contraction have so far diminished the calibre of the vessels of the womb as to render them incapable of producing the phenomenon of the *souffle*. Therefore, the "uterine sound," however decided an evidence of a gravid uterus, is no evidence of its containing a living fœtus. Dr. Naegelè insists upon it that the placenta is very rarely attached to the fundus uteri, or near thereto. Its usual position, he says, is at the side of the uterus, which, from the large size of the vessels of that part is best calculated for supplying the circulation required for the placenta. He states that the uterine *souffle* is most commonly audible in one or both of the inguinal regions, whence it generally extends either towards the hypochondrium, or more forward towards the umbilicus, though it seldom passes the mesial line. It is seldom to be distinctly recognised before the fourth month of pregnancy; but it can always be perceived several weeks sooner than the pulsations of the fœtal heart. The reason of its not being discoverable in the early period of utero-gestation, depends upon the position of the womb at that period, when it is low in the pelvis. When the uterus arises into the abdominal region, and presents itself above the pubes,

placenta, does not decide the question ; yet the union of both sounds prevents the possibility of any hesitation in coming to a decision. When the pulsation of the foetal heart is ascertainable, instances of which before the period of "quickening,"

the uterine sound comes within reach of the stethoscope. A powerful pain renders the *souffle* inaudible during its continuance, more particularly in the fundus and body of the uterus ; for it may often be heard in the inguinal regions when imperceptible elsewhere. But when the pains are feeble, the *souffle* may continue to be heard even while they last. The uterine sound has a very manifest sympathy with whatever affects the maternal circulation, but exhibits a decided independence of the circulation of the foetus. Thus, all changes in the movements of the maternal heart, as the acceleration, retardation, or intermission of its action, communicate themselves to the uterine sound. But it is not so with the pulsations of the foetal heart. The Auscultation of the uterine sounds has led to a prognosis of approaching hæmorrhage, and has even detected that position of the placenta, which is termed placenta prævia, and which causes unavoidable hæmorrhage. No practical point can be of more importance than this, so that it is one on which we must be somewhat explicit. Dr. Naegelè says—"A singular peculiarity in the character of the uterine sound has been noticed in some few cases, in which hæmorrhage took place in the latter months of pregnancy, owing to the insertion of the placenta near the os uteri. The sound was of ordinary intensity in the inguinal regions, but extended thence over the whole uterus, and even the smaller arterial ramifications seemed to concur in its production. The most dissimilar sounds were audible at the same time, and often at the same part, varying from the ordinary hollow murmur produced by the large vessels at their entrance into the uterus, to a hissing or shrill sound like the highest tones of a violin. In all these instances of præternatural vascular activity, hæmorrhage either was going on at the time of examination, or it shortly afterwards made its appearance." With respect to the insertion of the placenta in the neighbourhood of the os uteri, Dr. Naegelè informs us, that it is "indicated by the uterine *souffle* being heard just above the pubes, while it is audible, or very indistinct in any other situation. This peculiarity in the seat of the sound enabled us, in eleven instances, to discover the existence of placental presen-

Dr. E. Kennedy has communicated in his work, we shall find "a quick double pulsation, a miniature imitation of the adult heart, proportionally smaller, and wanting in a great measure its impulse, but clear, quick, and abrupt, offering as distinct a

tation before hæmorrhage had taken place, or the nature of the case could be detected by vaginal examination..... When the placenta adheres to the posterior wall of the uterus, the uterine *souffle* is heard on either side of the abdomen, and so far posteriorly that often it can be detected only on placing the patient on her side, by which means the stethoscope may be brought near the posterior wall of the uterus."

The author of this well-written little volume remarks on an irregularity which at times occurs in the character of the sound proceeding from the fœtal heart. Though this sound be usually that of a "quick *double* beat, exactly similar to that of an infant's heart," still "it occasionally happens that only *one* sound is to be heard, some circumstance having rendered the second sound exceedingly weak, or quite inaudible." The practitioner, therefore, ought to be prepared for this irregularity. The fœtal heart is liable to undergo very considerable variation, both in the frequency and the force of its action. Dr. Naegelè states, however, that "the frequency of the fœtal heart's pulsations, as deduced from a comparison of six hundred cases, averages one hundred and thirty-six strokes in a minute." But of its occasional variation, and of its sinking when the child is threatened with a termination of his existence, we have perhaps said quite enough in the text. Suffice it, therefore, to observe, that when the fœtus moves much in utero, the action of his heart becomes perceptibly quickened. In some pregnancies, presumptive evidence is afforded of frequent changes of position by the fœtus, from a distinct variation in the part whence the sound of the fœtal pulsation seems to proceed. In other cases, the position would seem to remain uniform, as the sound appears always to emanate from the same spot. Dr. Naegelè insists very much on the circumstance of the fœtal sound, or pulsation, being most distinct when any portion of the child's back or spine is in contact with the part of the uterine walls to which the stethoscope is applied. From this he has been enabled to point out the character of the presentation. He says, "In presentations of the head, or pelvis, the back always corresponds to that part of the abdomen where the heart's sounds are most distinctly perceptible." The interposition of

double pulsation, and possessed of characters rendering it almost as easy of recognition as that of the adult." The rapidity of the fœtal circulation being very nearly invariably vastly greater than that of the mother, we are here presented with a protection from the fallacious extension of the sound caused by the action of the maternal heart to the uterine region. For so far from the fœtal pulsation being synchronous with that of the mother's wrist, it will generally rate from 130 to 140 double beats in a minute; and, besides, we have the means of removing any thing equivocal from the case by tracing any sensation of which we entertain a suspicion upwards toward the cardiac region of the mother, and thereby determining whether it be

a portion of the abdominal viscera between a part of the uterus and the spot in the abdominal parietes to which the stethoscope is presented, may cut off the sound; and the insertion of the placenta at some particular part of the uterus may also obscure or isolate the pulsation. The neighbourhood of the *linea alba* is the part of the abdomen where the action of the fœtal heart has been most frequently detected in the early months of pregnancy. The progress of natural labour is said not to produce any evident alteration either in "the force or in the rythm of pulsations," except what we have before remarked with regard to their becoming inaudible during the continuance of a severe pain. But when the rupture of the membranes takes place, the pulsations of the child's heart become more distinct, "because the uterus now envelopes the fœtus closer, and the sound passes through more uniform media, and consequently is conveyed to the ear with greater clearness, than when, as often occurred before, a layer of liquor amnii was interposed between it and the uterus."

Dr. Naegelè dwells upon the peculiar *souffle* which sometimes proceeds from the umbilical cord, when this either becomes wound round the neck or some other part of the fœtus, or even forms a sort of a loop. This *bruit de soufflet* of the funis is always synchronous with the action of the fœtal heart, and should be borne in mind by the tyro in practising Obstetric Auscultation. But in the text this point has been alluded to.

more or less distinct as we place the stethoscope more remote from the uterine region. This at once decides the point. The exact spot from which the sound of the fœtal heart directly proceeds is, of course, somewhat uncertain, as it depends on the varying position of the fœtus in utero. Dr. Kennedy says, "It is generally to be met with over a surface of about three or four inches square, and rather in the inferior part of the abdomen, sometimes more at one side than another, at other times in the centre, and extending completely across the uterine tumour. In advanced pregnancy, we shall frequently meet with it most distinct at a point midway between the umbilicus and the anterior superior spine of the ilium. It is sometimes observed in this spot in early pregnancy, sometimes more over the pubis, and, what is strange, it is not unfrequently detected much higher in the abdomen, nearer the umbilicus, at this period." About the seventh month, however, we are to expect to meet it higher up in the abdomen, than at an earlier period, namely, "within a short space of the umbilicus. Towards the full period, this sound is often audible over a surface equal to more than one-half of the uterine tumour. The more general situation of it at this time is, as mentioned, the lower part of the abdomen, on a space bounded below by the pelvis, and above by a line drawn across the abdomen about an inch below the umbilicus." The loudness and distinctness of the pulsation of the fœtal heart, as perceptible to the examiner, will depend on the vigorous, well-developed vitality of the child, and secondly, on the region of the heart being contiguous to the part of the uterine region to which we apply the stethoscope. Thus, when the fœtus presents the head at the os uteri, with the left ear at the symphysis pubis, the perception of the sound will of necessity be clearer, than when the fœtal right side is turned to the anterior part of the uterus. On a breech-presentation, however, the converse will hold good; and the sound will be

heard higher up than in a presentation of the head. Thus, the stethoscope may afford us strong presumptive evidence of the position of the child, and in some measure prepare us, as we have before noticed, for what we are to expect to find on an examination per vaginam. But though the rapid action of the foetal circulation may be assumed as a general rule, and will prevent us from mistaking any sensation caused by the action of the maternal heart for it; still Dr. Kennedy has given us a highly instructive case, in which the former varied so greatly, as to sink below that of the mother in frequency. But it was a case in which the child was *in articulo mortis*, and actually did die in utero. Nothing can be more elucidatory, of the information that may be derived from obstetric auscultation than was this case, as the prognosis quite agreed with the result, and the examiner pronounced the death of the foetus just at the moment when, according to the clear evidence of subsequent circumstances, it appeared to have happened. Sometimes, however, the spot over which the stethoscopic phenomenon extends from the foetal heart is extremely circumscribed, though it be a rule that the cardiac pulsation of a newborn infant can be traced by the stethoscope over a comparatively greater extent of the frame than in more advanced life. In obstetric auscultation, the naked ear can often perceive the foetal pulsation, but the stethoscope is generally admitted to possess a decided superiority in this respect. Those who wish for more details in this interesting subject of obstetric auscultation than our limits can afford, we must refer to Dr. E. Kennedy's ample explanations on the subject.

168. But certain phenomena, which the intervention of the funis between a solid part of the foetus and the end of the stethoscope is capable of producing, ought not here to be passed over, as they are of some practical importance. The pulsation in this case yielded by the funis is necessarily synchronous with

the foetal heart; and it is equally decisive of vitality in the child. Now this pulsation may be altogether stopped by firm pressure of the stethoscope, where there is a resisting substance, such as a limb, the back, the head, or the hip of the child at the other side of the umbilical cord. If this pressure were long continued, there can be no doubt that it would put a termination to the vitality of the foetus. But it is worthy of consideration whether this stethoscopic sign from the funis may not lead us to inferences respecting a convolution of the cord round the foetal body, and put us on our guard as to the necessity of some precaution regarding it in the subsequent stages of parturition? Dr. Kennedy throws out the hint that even the very circumstance of the mother leaning with the abdomen against the edge of a table, when the funis thus intervenes between a resisting part of the foetus and the anterior wall of the uterus, may sometimes occasion the death of the child? A caution is here suggested which ought not to be disregarded by pregnant women. The funis, when *lightly* pressed upon, under the before-mentioned circumstances, is capable of yielding a sound somewhat resembling the placental *souffle*, but could scarcely be mistaken for it by any attentive and intelligent auscultator. It is neither so loud nor so protracted as the sound which proceeds from the placenta, and, besides, it wants the test of being synchrononous with the maternal pulse. This "*funic souffle*" may be occasioned by knots or any other partial cause of interruption occurring to the cord with the uterus, even without the slight stethoscopic pressure to which we have alluded.

169. The stethoscope, it is evident to any impartial judge who reads Dr. Kennedy's numerous proofs, is a most important addition to the obstetrician's means of determining the presence of a living child in the womb; and is in a degree to be looked to as capable of determining pregnancy even where the foetus has died. In deciding the case which the law of the land has absurdly

put with reference to staying the execution of convicted women who plead pregnancy to avoid sentence of death from being carried into immediate effect, the stethoscope is invaluable, as it may determine the actual vitality of the fœtus before the period of "quickening." It is shameful that some of our legislators do not bring the absurdity, or perhaps we should more correctly denominate it the murderous iniquity, of the law in this respect before parliament. Why should the statute-book continue thus disgraced in what we are proud enough to style "this enlightened age?" Every physiologist is quite aware that the child is as certainly alive before, as subsequent to the period when the sensation of "quickening" is experienced. And an innocent being is as decidedly deprived of its existence at the second, as at the fifth month of pregnancy by the execution of the mother. Now is this point to be left to the discretion of a judge who perhaps never studied physiology in his life? This disgraceful law, with its ludicrous "juries of matrons," ought to be at once wiped away from our code. It is a deep stain on the wisdom and justice of the British nation, and it is well that obstetric auscultation may serve, and indeed it has more than once stepped in to diminish the murderous effects of this disgusting law. But the mere circumstance of the existence of pregnancy, whether or not symptoms of the child's vitality can be clearly established, ought to form a sufficient legal ground for postponing execution; for that vitality may unquestionably exist for a time without being discoverable. Yet pregnancy alone would not now be a ground for postponement with the mere black-letter lawyer. The postponement, however, would give time for the prevention of a murderous deed, for it could not fail in a short time to determine the point at issue. And what injury could it do to society? None whatever. Again we say, it is to be hoped that the matter will not

escape the attention of our legislators. What are Messrs. Wakley and Warburton about? Surely they cannot plead ignorance on the subject.

CHAPTER XII.

UTILITY OF AUSCULTATION IN TWIN-CASES.

170. Another most useful application of the stethoscope is to ascertain after one child has been delivered, whether there remain more living offspring in the womb. It is not only the surest, but by far the most unobjectionable method of determining this point, and directing the practitioner's subsequent operations. When a living fœtus is retained in utero, we have both the placental *bruit de soufflet*, and the fœtal pulsatory sound to make us acquainted with the fact. And how much less objectionable is this test than putting the mother to the annoyance of a manual examination! In some cases we may succeed in ascertaining by the stethoscope the prescence of a plurality of children in utero, before parturition; but this is not invariably the case: even when we imagine that we have determined the matter, in the first stage of labour, some cause of fallacy may render our decision inaccurate. But this cannot be the case where a living child continues in the womb after the birth of another. The test in this case becomes the more valuable, inasmuch as a very considerable interval has sometimes taken place between the birth of twins, at times amount-

ing even to days. The *ballotement* is the test which next to auscultation recommends itself in such a case [159], but the stethoscope is preferable, for the latter gives us information with regard to the vital state of the child, or children.

171. But in cases where it becomes necessary to have recourse to the use of instruments in delivery, the evidence of the stethoscope, as to the life or death of the child, ought never to be dispensed with. Where the practitioner, after a very careful examination, becomes convinced that the *foetus* no longer possesses vitality, he from that moment turns all his solicitude to the mother, and only thinks of adopting such means as will most effectually ensure her safety and promote her comfort. Thus will he be greatly guided in his choice of instruments, and all his measures will to a certain extent be influenced by this only definite test, as we may well term auscultation.

172. There are several other subjects treated of at considerable length in Dr. E. Kennedy's book on the evidences of pregnancy, but to those we can do scarcely more than make a brief allusion. On the subject of Pseudo-Pregnancy, he dwells very fully. This Dr. Kennedy divides into several species. There may be a simulation of pregnancy by morbid growths, such as *hydatids*; tuberculated and other structures in the uterus itself; and these growths may afford some of the manual signs of pregnancy, though quite unaccompanied therewith. They will not, however, furnish the genuine stethoscopic phenomena; and, besides, they seldom observe the regular course of developement noticed in the real ovum. In the *abattement* and *ballotement*, likewise, those morbid uterine growths cause very different sensations to the fingers of the examiner, from those occasioned by the more moveable *foetus*. Moles, and indeed most other morbid growths, are usually expelled at an early period. They are developed with much more rapidity than the *foetus*; and should they not be expelled within the

three first months of uterine enlargement, as commonly is the case, they afterwards cease to augment in bulk according to the accustomed ratio of a child in the latter months.

173. Moles, however, are liable to be mistaken in some cases for abortions, as we have more particularly noticed in treating of the latter; they are attended in their expulsion, as well as preceded, by much hæmorrhage. They are thought to be frequently derived from clots of coagulated blood, probably the produce of mænorragia. These clots take upon them an imperfect species of organization, and on expulsion present appearances that might deceive an incautious observer, and lead him to pronounce the mole the effect of actual impregnation. But a closer examination will prove them to be very different. Moles, however, seem occasionally to be “blighted ova, which, on the death of the fœtus, remain in the uterus, become coated with coagula, and if they remain here long, the fœtus becomes withered, decayed, or disorganised.”

174. Enlarged ovaries may also be included among pseudo-pregnancies, especially, as in general is the case, when the enlargement proceeds from dropsical tumour. This is the more easy of being distinguished from enlargement of the uterus, inasmuch as it commences at one side, and gradually extends upwards and across the abdomen. Often fluctuation can be discovered in it, and the uterus be found to admit of being separated by the hand from it, on the judicious application of pressure. Of course, the stethoscope here fails to recognise the true fœtal signs. Dropsical state of the uterus may take place; but ascites, or dropsical effusion into the peritoneal cavity of the abdomen, is a far more frequent cause of pseudo-pregnancy, than is uterine dropsy. Of ascites we must judge chiefly by the presence of fluctuation, and the absence of the more unequivocal symptoms of genuine pregnancy than mere abdominal enlargement affords. A tympanitic state of the

uterus itself, or even of the intestinal canal, has been mistaken for utero-gestation. Tympanites of the uterus may either occur gradually, until very considerable enlargement has taken place, so as to look exceedingly like pregnancy: or it may be merely the occasional accession of some gaseous matter, frequently discharged with some noise from the uterus. If it be the former of these, Dr. Kennedy gives it the name "True Tympanites uterinus," the latter, he terms "*flatus* of the uterus." The latter, from its character of varying bulk, can scarcely be mistaken; but the former is more calculated to deceive. On percussion, however, the tympanitic sound, and the remarkably tense and unyielding feel of the uterus ought to afford sufficient means of diagnosis. In the *abatement*, also, the tumour is very light, and very different from what true pregnancy appears to be. In *flatus uteri*, the warm bath is recommended as serviceable. This tympanitic state of the uterus is said to be more frequent in females who are irregular in the menstrual function, and who have cachectic symptoms than in others.

174. Where a flatulent state of the bowels occasions abdominal distension, not only is the general enlargement of the abdomen apt to be mistaken for real pregnancy, but the female herself experiences such sensations as she is liable to confound, and that most obstinately too, with the motions of a fœtus in utero. Dr. Kennedy particularises several cases in which mistakes occurred from this cause; but they were speedily put to rights by administering one or two doses of castor oil and oil of turpentine, āā from ʒvj to ʒj. This soon expelled the flatus, and reduced the pseudo-pregnant lady to seemly proportions.

175. There is also a kind of pseudo-pregnancy, if such it may be styled, which presents no symptom but an obstinate conceit of the female that she is in a fair way of becoming a

mother. On this she will insist, notwithstanding the strongest arguments or evidence to the contrary. This manifestly is a species of hypochondriasis, and merely requires to be mentioned. The illusion sometimes is carried to the most extravagant lengths, and even has been maintained continuously for a number of consecutive years !

176. When pregnancy takes place accompanied by any of those morbid conditions which we have mentioned as causing an increase of bulk, the case becomes somewhat embarrassing. Ascites happening in combination with a gravid uterus demands much caution on the part of the medical attendant ; and much more serious consequences have resulted from the pregnancy being overlooked, than from the latter having been mistaken for the former.

177. A very large secretion of liquor amnii is considered a morbid condition of the uterus. Dr. Kennedy is disposed to regard it as proceeding from a syphilitic taint. It does not augur well for the child's coming to maturity, and is often a consequence of his death having taken place. We have before said that there might occur a secretion of the waters between the membranes. All those occurrences militate against our obtaining a favourable auscultation. Whenever there is a distended state of abdominal parietes, or any thing, even adipose substance, interfering with our capability of obtaining due relaxation of them, it militates more or less against the evidence derivable from examination of the uterus. From percussion, evidence of pregnancy can often be acquired to a satisfactory, though not to a perfectly conclusive degree. This, however, requires some experience as to the sounds emitted on the percussion of various substances : for in these the ear must be practised. Where we percuss over the abdominal viscera, which always contain more or less of an ariform fluid, the

sound is considerably more tympanitic than where the uterus intervenes; and in proportion to the solidity of the uterine contents will be the dulness of the sound on percussion over it.

EVIDENCE OF THE FŒTAL VITALITY HAVING TERMINATED.

178. Though much of what has been previously said, more especially with regard to auscultation, have a bearing upon this division of the subject, still the great responsibility which attaches to a practitioner in adopting measures properly applicable only to a dead fœtus, unless the life of the mother be unequivocally dependent on his having speedy recourse to them, must always render a decision with regard to fœtal vitality one of considerable anxiety and cautious deliberation to the conscientious medical attendant. When we asserted that a very distinct *bruit de soufflet* decides the question of the presence of a living child, we did not go farther than the fair interpretation of the phrase "*very distinct*" would justify. But, inasmuch as every modification of the placental sound does not cease at the child's death, our expression may possibly be considered to partake of too much latitude. Though we cannot under any circumstances have the genuine *bruit de soufflet*, in all its sonorous phenomena, except where the fœtal circulation preserves its integrity, nevertheless, as may be inferred from what has been said of the imitative sound given out by the uterine circulation in the neighbourhood of the placenta, a faint resemblance to those phenomena may be perceived so long as the increased circulation attendant upon the enlarged state of the uterine vessels continues. This may for a moment impose upon the inexperienced auscultator, but the practised stethoscopist cannot be deceived by those degenerated sounds,

for they undergo a change scarcely, if any thing, less decisive of the question than the complete cessation of all sound from the placental region would be. Now, according to Dr. E. Kennedy's ample experience in obstetric auscultation, in the imperfect *souffle*, "The sound emitted is observed to be more abrupt, of shorter continuance, wanting its protracted terminating whiz, and generally confined to a circumscribed spot. In some cases it is even little more than a pulsation, such as is observed on applying the instrument over one of the large arteries." It is for this last reason that he calls it "pulsatile" in several parts of his work. Now this imperfect sound may continue after the death or even after the birth of the child, or even after the separation of the placenta, that is, if uterine contraction be not complete; and it is often distinct during uterine hæmorrhage. In a word, nothing but so perfect a contraction of the uterine substance as will suffice to close the enlarged blood-vessels of that organ can put a total stop to this modified sound. But with regard to the sound furnished by the action of the fœtal heart, it is utterly impossible that this can continue a single moment after the cessation of the child's life. Now if we could pronounce confidently on the termination of the latter sound, no doubt could exist with regard to the fœtal life having ceased. But as circumstances may render it imperceptible to the auscultator, or very difficult to be discerned, though not completely extinct, a precipitate judgment is to be avoided. The fœtus, for instance, may be so situated in the womb as to present an unfavourable opportunity for the sound being conveyed to the ear of the investigator; or the action of the fœtal heart may be feeble, or undergo a momentary interruption. Again, the contraction attending uterine pains, as before remarked, interrupts our facility of satisfying ourselves by auscultation. Now all these things suggest to us the precautions we are to observe. We are to wait for the in-

termination of the pains ; we are patiently to explore every part of the uterine region ; we are to repeat the examination again and again, before we pronounce definitively on the death of the child. But if, after our distinctly perceiving the foetal pulsation, it should become weak and irregular, and subsequently cease, our diagnosis cannot fail to be unfavourable.

179. Dr. Kennedy attaches much and just importance to our being able to employ auscultation in a dexterous manner during the progress of labour, so as to have it at all times in our power to form the most correct opinion possible with regard to the vital state of the child. In order to aid this practice, he has given several useful directions of which we shall avail ourselves. " First, as to the position in which the foetal heart's action will be detected. We would naturally expect that as the foetus changes its position, during the progress of labour, so would the situation of the sound. For some days before labour setting in, it is a well-known fact that the abdominal tumour descends, the uterus falling more into the axis of the inlet to the pelvis, the head of the child resting, at the commencement of labour, directly at the upper pelvic aperture. At this time the action of the child's heart is to be observed, generally, most distinctly at the side to which the body is placed, and opposite to that where the limbs are to be felt. It is usually lower down than during [the previous part of] pregnancy, and is often observed to spread completely across the lower part of the abdominal tumour, being occasionally detected at the other side.

180. " When the labour has set in, the uterus still descending a little, the pulsation will be lower, and heard over a more or less extensive surface, as the head adapts itself to the different measurements of the pelvis, and the foetus assumes a more or less oblique position. As the labour advances, the pulsation is observed lower, until at length, in some cases, it is percep-

tible only at a spot, immediately over the ramus of the pubis. The head now becoming engaged in the lower strait, the face gets into the hollow of the sacrum, when the back of the child comes gradually in contact with the parietes of the abdomen; and we now have the pulsation, although it may have been previously confined entirely to one side, generally extending completely across the pubic, and often heard in the iliac region; for we may observe it even when the head is pressing on the perinæum.

181. " This is the state of the case in ordinary pregnancies, where the head presents in the most natural manner, namely, with the occiput towards the arch of the pubis, the face being towards the sacrum. When the face is turned towards the pubis, we observe nearly the same phenomena. In the latter stages of labour, the pulsation extends in a similar manner over the pubis, the breast in this case applying itself to the abdominal parietes, as we observed the back to do in the former case. When the face is the most depending, or, as it is termed, the presenting part, we cannot in general observe the fetal pulsation so distinctly; at least such was the result in two cases of the kind which we explored. This may depend a good deal whether it is the mento-sacral, or the mento-pubic presentation. In the cases in which we observed it, the chin of the child was turned towards the sacrum, which caused the body of it to be pressed from the walls of the abdomen against the spine, thus rendering the pulsation less distinct: whether the same circumstance would be in the reverse position, is questionable; as, in that case, the chest of the child would be pressed against the abdominal parietes, and from the spine; thus bringing the child's heart into more immediate contact with the former. In presentations of the vertex, the sound was heard much as when the occiput presented, and generally over rather a great extent of surface; whether this arose from the position,

or that the action of the child's heart was here more laboured, it is difficult to say.

182. " From the cases of arm-presentation, which have hitherto been submitted to stethoscopic examination, we should not deem ourselves justified in arriving at any general conclusion, as to the position in which the fœtal heart should, in such, be audible. In cases of breech-presentation, the fœtal heart's action is observed higher up, and, according to the advancement of the labour at the time of applying the stethoscope, above or below the umbilicus. During the progress of pregnancy, and when the breech is resting at the superior strait of the pelvis, the pulsation is generally perceptible above the umbilicus, and at the right or left side according to the child's position. In most of the preceding cases, the placenta is attached lower down in the uterus, and its *souffle* is in a considerable proportion audible at one or other side, and not unfrequently at both. We have not the heart's action at the ramus of the pubis in breech presentations, as we have in cases where the head presents; although there is occasionally a pulsation to be met there also. When the breech presents, with the thighs turned towards the sacro-iliac symphysis, as is most frequently the case, the phenomenon of the fœtal pulsation is both more distinct and more extensive; a circumstance which is easily explained, if we consider for one moment the position, which the fœtus then occupies, with regard to the abdomen of the mother.—In the position we speak of, however, the pulsation of the fœtus is sometimes heard extending from two or three inches above the umbilicus, over the whole anterior part of the abdomen, inclining to one or the other side, according to the position of the back of the fœtus. In this way it is sometimes to be detected so low as the pubis, and even in the right or left hypogastric region, where we observe the heart's action in cases of head presentation. It is not throughout this place so distinct

in its characters, as it is immediately over the part corresponding to the chest of the child, which is in general near the maternal umbilicus. The sound heard below in these cases, may either depend upon the foetal heart's action being conducted, as we have seen it may be, along the back of the child to the inferior part of the abdomen, or upon the pulsation of the umbilical cord, which may be here situated. In foot and knee presentations, the same observations will pretty nearly apply, with regard the situation of the foetal heart, as in cases where the breech is the more depending part."

113. The above information is so highly practical, that a moderate degree of experience in the use of the stethoscope can hardly fail to apply it to advantage in the progress of labour, where the knowledge of the continuation of foetal life is by no means matter of mere curiosity, but influences our proceedings in most essential respects. As to the other popular symptoms by which it is too commonly supposed that we have assurance of the death of the child, Dr. Kennedy has furnished several interesting cases to prove their great uncertainty. He has shewn that a foetid discharge may take place from the vagina, though the child be actually alive; that there may be a prominent tumour on the scalp, though the child be dead; that a child may be borne dead and still retain that livid discolouration which writers have laid down as a mark of vitality; and that a protruded limb, such as the arm, may retain its swollen and livid appearance for a considerable time after the vital spark has been extinguished. But what is still more extraordinary, and contrary to received opinions, an appearance of decomposition in the foetal integuments may co-exist with life. Where the bones of the foetal cranium by pressure become loose, and as it were quite separated within the cranial integuments, giving to the touch the sensation which has been described as that of "a bag of shells," we may be quite sure that not only

death, but an advanced degree of decomposition, has taken place. When the tumour on the scalp has an emphysematous, or crisp feel, there is little room for doubt that death is the cause of it. Again, we may have children born that have continued dead in the uterus for a considerable period without the putrefactive process having set in. The want of pulsation, or rather our failure to discover it, in the fontanelle, is not to be relied on as evidence of the child's death, for, says Dr. Kennedy, it "is not always to be felt, and when it is, the pulsation is seldom to be distinguished satisfactorily, although there be ample proof of the child's being alive." The funis ceasing to pulsate is far more deserving of notice. But then we must not confound a *temporary* suspension of that pulsation, which is quite compatible with the preservation of foetal life, with its total cessation. We are to endeavour to remove the pressure from the umbilical cord, as directed [86], and afterwards try again to discover its pulsation. Dr. Kennedy narrates a case wherein the pulsation in the funis was extremely doubtful, and still the stethoscope gave evidence of "a slight foetal pulsation over the pubis." In this case the forceps were immediately applied to accelerate birth, and the life of the child was preserved.

184. While Dr. Kennedy is a warm advocate for obstetric auscultation, and has given such a multitude of unequivocal cases to prove its incalculable superiority to every other species of test, he very candidly warns the inexperienced stethoscopist, or those who have not been able to succeed with this mode of examination, against coming to any conclusions from its evidence. Our experience, so far as it has gone in stethoscopic practice, fully sanctions our assent to his valuable deductions. And we consider that Dr. Every Kennedy, by the exceeding industry with which he has applied himself to the use of the stethoscope in obstetric cases and the great minuteness with which he has described its phenomena, has laid his peculiar

branch of the profession under the deepest obligation to him. We hope that even the little we have here supplied from his well-digested and entertaining work, on a subject which all systematic treatises that we have seen on Midwifery have treated with neglect, may be of essential use to practitioners; but those who are ambitious of becoming adepts in auscultation should not dispense with a careful perusal of the original work itself, including the illustrative mass of valuable and convincing cases it presents.

* * We cannot in common justice, dismiss the subject of Obstetric Auscultation, without expressing our astonishment, that several of the discoveries made by Dr. Evory Kennedy, as for instance, the '*funic souffle*,' the continuation of the uterine sound after delivery, &c., which were published many years before the appearance of Dr. H. F. Naegle's treatise on the same subject, should have been put forward by the latter gentleman as novel, and without the slightest notice of the source from which they had originally been derived. We are quite at a loss to what to ascribe this strange occurrence, as it is difficult to imagine that Dr. Naegle could have given his treatise to the world upon the subject without becoming acquainted with the writings of Dr. Kennedy, which not only preceded his by more than seven years, but were referred to by multitudes of European authorities who treated of midwifery during the period. This was hardly fair, either to Dr. Kennedy, or to the history of science.

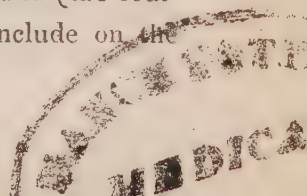
In looking over the article on the '*Signs of pregnancy and delivery*, by W. F. Montgomery, M. D.' published in the *Cyclopædia of Practical Medicine*, years before Dr. Naegle's work, —we find appended thereto an extract of a letter from Dr. Kennedy to Dr. Forbes, clearly proving that Dr. Kennedy was fully aware of the influence which the *uterine* circulation had in producing the *placental souffle*. In this letter, Dr. Kennedy

says,—“ You appear to have misunderstood me, when you state, ‘there seems little ground for believing with Dr. Kennedy that the placental arteries themselves have a share in the production of the sound any farther than by their action promoting that of the uterine arteries.’ Dr. Kennedy then refers to p. 24, of a paper he had communicated, to show that ‘He merely deemed it possible that the passage of the blood through the arterial tubes and cells of the *maternal part* of the placenta may have *some effect* in producing it.’ In another place Dr. Kennedy, speaking of the possibility of its operating so, adds, that ‘the point still admits of some doubt.’

This renders it unquestionable that Dr. Kennedy preceded Dr. Naegle in contemplating the ‘placental souffle,’ as uterine.

Now with regard to the *souffle* surviving delivery, not only is there indubitable evidence in Dr. Kennedy’s work on the evidences of pregnancy that such was his opinion long before Dr. Naegle wrote on Auscultation, but we also meet, in the extract of a letter from which we have just quoted, the following passage:—

“ There is still another point to which I wish to draw your attention, as, from the manner in which you quote me, my meaning is very equivocally conveyed. You say, “Dr. Kennedy denies M. Ollivry’s statement, that the soufflet is immediately extinguished on the removal of the placenta, the death of the foetus, and the tying the cord, the sound becoming abrupt, &c. From this,” continues Dr. Kennedy, “it might be concluded that I stated the soufflet always to continue after delivery, death of the foetus, &c., an inference widely at variance with the fact, and such as was never intended by me. You will find, p. 144, Dub. Hos. Rep. vol. v. the passage which you quote; it runs thus:—‘Neither does the sound (the soufflet) *invariably* cease, as we might be led to conclude on the



authority of Dr. Ollivry, on the separation or expulsion of the placenta; but provided the uterine arteries at this part, from imperfect contraction of the uterus, continue pervious to blood, a soufflet will still continue,' &c. Here you will at once perceive how much the words 'immediately extinguished,' in place of 'invariably cease,' affect the nature of the statement."

Dr. Kennedy, we here discover, has no need of Dr. Naegle's treatise to prompt his views on the subject of Auscultation. At what time the soufflet becomes *extinct*, we cannot venture to pronounce; for we have heard of its being distinguishable long after delivery, and when it was concluded that uterine contraction had been well-established. But we mean not to venture upon the subtilties of the subject, our only object being to guard against any misunderstanding which our wish to confine ourselves to practical points, and the brevity of our digest, might lead the reader into with regard to Dr. Kennedy's work; and to prevent our being in any degree auxiliary to that gentleman being robbed of his just claim to originality.

Before we conclude, we may as well remark that in a paper communicated to the July number of the Dublin Journal of Medical Science for 1840, by Thomas Edward Beatty, M. D., M.R.I.A., describing "A case of Pregnancy complicated with a Tumour, occupying near the entire pelvis," Dr. Collins is stated to have 'suggested the probability, that the fœtus was placed with the breech downwards, in consequence of the height at which the fœtal heart was audible.' This was at a time when no effectual vaginal examination was practicable. This case is corroborative of the views put forward by Dr. Kennedy, page 245 of his work, which are illustrated by his third plate, indicating the position in which the fœtal heart is perceptible, according to the different presentations.

Hence we have a proof that our Dublin practitioners of eminence did not require intelligence from Germany to indi-

cate points which Dr. Naeglè has put forth with so much show of novelty in his very recent publication; which Dr. Collins at the time could have known nothing of. The result proved the accuracy of Dr. Collins's diagnosis.

We should probably have been tempted to give this very novel and interesting case supplied by Dr. Beatty, were it not for the advanced state at which the printing of our volume had arrived when the paper reached us.

CHAPTER XIII.

RUPTURE OF THE UTERUS.

185. The rupture of the uterus has ever been deemed by most obstetricians a calamity almost necessarily fatal, and no doubt it is an extremely formidable one. But Dr. Thomas M'Keever, of this city, has given the clearest proofs that recovery from it has not been by any means so infrequent as has been imagined, and that females have borne several living children after having had the uterus most indisputably and extensively ruptured. We have now lying before us a treatise by that distinguished practitioner, which was published so long back as 1824, for the purpose of bringing before the profession —“*Practical remarks on lacerations of the uterus and vagina: with cases.*” The information therein contained is of the highest importance, and we shall endeavour to take advantage of it, so far as is consistent with the plan of our work. The

symptoms of rupture of the uterus having occurred, we could not by any attempt of our own describe with more effect and distinctness than by adopting Dr. M'Keever's words:—

186. "When the uterus gives way spontaneously, that is in consequence of its own inordinate action, the following is, in general, the history of the case. The patient, who, in all probability, has had a succession of difficult labours, after encountering for many hours, perhaps for days together, sufferings of the most acute and harrassing description, and at a time when her anxious friends and attendants are impatiently looking forward to the happy moment which is to free her from her misery, and render her a joyful parent, is suddenly attacked with an agonizing, crampish pain, referable to some particular spot in the abdomen; during the intensity of which she exclaims, that something has given way within her; she becomes sick, vomits a little, and complains of the child having risen to her stomach. Her pains cease, or are altered in character; she looks pale and ghastly, her countenance expressing great mental and bodily distress; she writhes and twists, with the severity of her torture, on the hand being applied to that part which she describes as the principal seat of it; she sighs often; complains of a stitch about the heart; has embarrassed breathing; and desires to be raised in the bed.

187. "Occasionally, however, the patient lies perfectly quiet on her back, with the knees drawn up; in this position the abdominal muscles are relaxed, by which the pressure on the lacerated part is, to a certain extent, diminished.

188. "When these symptoms are present, the experienced practitioner will feel but little hesitation in deciding on the nature of the case; but if, in addition, we find that there has been some hæmorrhage from the vagina, that the presenting part has receded, that the abdomen has become so exquisitely tender as to render the slightest pressure intolerable, having,

at the same time, become more prominent, and of an irregular shape, and that some projecting part of the infant can be distinguished immediately under its parietes, the case no longer admits of the possibility of doubt.

189. "We are not to expect, however, that in every instance the symptoms will be so obvious, or so well defined, as those I have stated. Thus, where the head is low down, firmly impacted in the pelvis, and that the injury is confined to the muscular substance of the uterus, its peritoneal covering continuing entire, we are deprived of several of the leading marks. In the first place, there will be no hæmorrhage *externally*, in consequence of the vagina being blocked up; secondly, there will be no receding of the presenting part: and, lastly, we will be unable accurately to distinguish any part of the infant immediately under the abdominal parietes.

190. "I have said that the labour pains either cease altogether, or become altered in character, from the time of the accident; in many cases, however, they continue to recur with tolerable regularity, at least until such time as the uterus has got completely shut of its contents; and on more than one occasion have I known the action of the uterus to return with sufficient force to effect the expulsion of the child through the natural passages."

191. Dr. Denman appears inclined to attribute rupture of the uterus, so far as the remote cause is concerned, to some part or parts of that organ having failed to acquire the degree of thickness accordant with the state of pregnancy, and thus being weaker than is consistent with resistance to the pressure of its contents. Or thinks that inflammation or some disease might have weakened its texture. "Or," says he, "independently of disease, the uterus may be worn through mechanically, in long and severe labours, by pressure and attrition between the head of the child and the projecting bones in a distorted

pelvis, especially if they be drawn into points or a sharp edge." The Doctor also surmises that even spasmodic action without any other cause, may effect the rupture: or that violent accidents happening to the mother in an advanced state of pregnancy may occasion it. But imprudent attempts to turn the child in a contracted uterus in violent action, after the liquor amnii has been evacuated, and with disregard of those cautions given in another part of this work, would sometimes be fully adequate to rupturing the organ. Dr. Denman's opinion is that the posterior part of the uterus is that which most commonly gives way, but sometimes the laceration takes place either at the anterior or lateral part, and usually near the union of the cervix with the vagina. Dr. Burns says that the rupture generally occurs at the cervix, and that the wound is transverse. It is very uncommon for the lesion to happen before the rupture of the membranes. We seldom have much warning of the event, and it may occur at the very moment of expulsion of the child through the os externum, in which case we can hardly attribute it to any other, as the proximate cause, than a violent spasmodic action of some part of the uterus; and we have seen that the cervix uteri, where the accident oftenest happens, is the very part most subject to spasm. "But," says Dr. Burns, "a very frequent cause of this accident, is a disproportion between the head and the capacity of the pelvis, by which a portion of the cervix uteri is pinched between the head and the pelvis, and fixed so that the action of the uterus is directed against this spot rather than against the os uteri." He also tells us that the cervix uteri may be lacerated by the linea ilio-pectenea being so sharp as to cut it through, or so completely disorganise it as to deprive it of vitality. Even apparently trifling obstacles to the passage of the child through the vagina have appeared the cause of rupturing the uterus. Dr. Burns, who has so marked

an abhorrence to the occurrence of spasmodic action, that he constantly endeavours to fight it off with opium, is disposed to look out for rupture of the uterus chiefly in very irritable women, and those who are subject to cramps. He also admits that preternatural presentations may in some degree be productive of the accident. Severe and ineffectual pains should, indeed, put us on our guard, and the risk of their preceding so awful a casualty is, we must confess, one of the strongest arguments in favour of our allaying them by opiates.

192. But, without going into further speculations with regard to the cause of rupture of the uterus, to obviate which we certainly ought to conduct every labour in a manner the least likely to excite irritation or unnecessary exertion in our patient, it becomes material to us to know to what measures we are to have recourse when it does take place. Where the woman is so fortunate as to have given birth to the child,* the case is infinitely less embarrassing to the practitioner than when the foetus has escaped through the uterine rent into the cavity of the abdomen, and lies on the convoluted intestines. The latter is a sad case, but it is unfortunately that with which we are most commonly presented in laceration of the uterus. Some names of eminence, judging, it would appear, from the occasional result of extra-uterine pregnancy, have strangely advised the foetus to be allowed to remain in the abdominal cavity, and left to take its chance for some extraordinary feat of nature; but Dr. M'Keever successfully combats so very indefensible a proposition. He advises immediate delivery, even though we were compelled to effect it by making an incision through the abdominal parietes, and extract the child by a manual operation. We believe that few obstetricians of

* I lament to say that very trifling lacerations of the uterus generally prove fatal.

note now are opposed to immediate delivery; but introducing the hand promptly, but, of course, with the utmost caution and gentleness, through the rent in the uterus, so as to get hold of and bring back the child to a position favourable for parturition, that is to say, delivering by the feet, seems now to be considered the ordinary rule of practice. Indeed, we regard the propriety of prompt removal of such a foreign body as a full-grown fœtus from the cavity of the abdomen, and from pressure upon the viscera, so self-evident, that we conceive all argument to be superfluous on the point. Dr. M'Keever, however, discusses the somewhat uncommon case wherein the fœtus escapes through a rent in the uterus before the os uteri has become dilated, and enquires how we are to act in such a case—a rare one, it is true, but yet one that may by possibility be met with. He decides in favour of gastrotomy in this case, and we think very rationally; and there are many instances of success on record fully to bear out Dr. M'Keever in this decision. The operation by which the child is to be removed from the abdominal cavity is termed the “Spurious Cæsarean section.” Dr. Burns recommends, when the os uteri is sufficiently dilated, that the hand should be introduced into the uterus, passed through the rent into the abdominal cavity, the child's feet laid hold of, and the delivery effected in the manner which we intimated to be the general rule of practice at present; but when the os uteri is not dilated, and we are called in early, before the pressure of the child on the abdominal viscera could have caused inflammation, and especially where we have a contracted pelvis to contend with, Professor Burns says, “we ought to extract the child by a small incision.” We are not, however, to expect the fœtus to survive, for it usually expires immediately after its escape from the uterus. But even where delay has occurred, and the case has thereby been rendered more hopeless, the delivery by incision,

nevertheless, does not appear to us objectionable, inasmuch as it seems to afford the only reasonable chance the patient can have, slight as that chance may be. If the uterus be both in a contracted and in a highly irritable state, when we introduce our hand with the intention of bringing back the foetus through the uterine rent; does it not seem that we should avoid persevering in the execution of that intention, under such dangerous circumstances? Let it be here calmly considered whether the delivery by incision would not be less likely to be attended with serious difficulty, than forcing the hand through the contracted rent and resisting uterus? Where the womb is flaccid and unresisting, indeed, our decision may be different. But still the question of a deformed pelvis is one that must not be disregarded when we are coming to a decision. Where the child is so far advanced in the vagina at the time of the accident as to enable us to give instrumental aid in accelerating delivery, all authorities appear unanimous on its being our manifest duty to do so. If the forceps be available, we may, perhaps, employ it in preference, though with no prospect of saving the child's life; but if the contracted state of the pelvis indicate the use of the perforator, we must have no hesitation in employing it. As it is in deformed women we have most reason to look for this accident; and as our great object is to lessen irritation of the uterus as much as possible by diminishing the severity of traction; so the perforator and crotchet will be our most common resource. Our having a dead child to operate upon is what we have almost invariably to expect; yet if the stethoscope point out an exception to that general rule, it should induce us to act accordingly.

193. But rupture of the uterus, though generally, is not altogether confined to the period of labour. It may happen even at any stage of pregnancy; being in such case usually the consequence of some severe accident, such as the gravid

uterus being crushed by coming in contact with two resisting bodies, or by receiving a kick, or a blow of some blunt weapon. It is said, also, that violent exertion may cause it; and we have it from respectable authority that very violent affections of the mind may have a similar effect, though this is rather difficult to believe. However, when the accident does take place during pregnancy, there generally occurs severe pain at the moment of the rupture, and, speedily after it, the child is perceived to struggle violently. This sense of motion is soon succeeded by one of oppressive weight in the abdomen; and, in the event of the child being sufficiently advanced in formation, its limbs will be discoverable through the abdominal parietes, thus removing all doubt as to the nature of the case. Other symptoms of constitutional disturbance will probably be present, such as vomiting, rapidity and weakness of the pulse, &c., in proportion to the amount of injury sustained and the irritability of the system. If inflammation and death should not promptly be the consequence, we are told that, especially in early pregnancy, there is a chance of the abdomen in a measure accommodating itself to its new adjunct: that a sort of berth is constructed for the ovum by a certain disposition of the intestines and peritonæum, together with a layer of lymph thereupon deposited. We are informed of a kind of cyst having been formed by a species of chronic inflammation thus set up, and of the fœtus having remained for many years in this extraordinary domicile, without interfering materially with the natural powers of life. The issue was, that the mass was ultimately discharged by the rectum. Whether this very marvellous occurrence be true, or a medical romance, we are told that it is usual in such cases of survival for abscesses to form in the abdominal parietes, and for the remains of the fœtus to be discharged, piecemeal, through the ulcerated openings.

thus made therein. Dr. Burns says that occasionally, but not necessarily, pains like those of labour come on on those occasions.

194. While a hope of such an extraordinary process occurring exists, there will naturally be some difference of opinion as to the steps that should be taken where the uterus gives way in pregnancy. Some persons will be disposed to say, "Do not meddle with the affair, but leave the matter to nature, which may secure the mother's life better than surgical interference could hope to do." Others, considering the very great risk there always is of such a foreign body exciting violent intestinal inflammation, and derangement of most important vital functions, and confiding, too, in the simplicity of the surgical incision by which the incongruous burden may at once be removed; together with their estimate of the slow and distressing process of painful abscess by which it must, if left to nature, under the most favourable circumstances, be ultimately got rid of; will be advocates for the "Spurious Cæsarean Section." Much will depend upon the manner in which we find the patient affected. If the constitutional disturbance be so great that we have every reason to conclude that violent and fatal inflammation is to be apprehended, it is to be presumed that no prudent practitioner would hesitate to make the section forthwith, after having fortified himself by a professional consultation if practicable. But, if the symptoms gave fair promise of a more favourable issue from the natural process we have described, and, in addition, the patient and her friends were particularly averse to any operation, on the fair state of the case being explained to them, then nature, perhaps, may be intrusted with the case, without any compromise of conscience or professional reputation. But, as we have intimated, such things should seldom or never be decided on without professional consultation, as

even the "Spurious Cæsarean Section" can scarcely be ventured upon without some professional assistance in the operation. All idea of dilating the os uteri artificially, and delivering by the introduction of the hand into the uterus, appears to be quite out of the question in this early case of uterine rupture. Dr. Burns and others doubt whether the patient could outlive the operation of dilatation, &c., while labouring under the terrible sufferings of a lacerated uterus. Where a portion of the vagina is involved in the rent, the idea of delivery may be more readily entertained, for a passage into the uterus may be effected by a trifling dilatation of the wound. It is our duty, in any decision we come to, to do all in our power to obviate, or remove, inflammation, or any other untoward symptoms, if the slightest prospect of the patient's existence being prolonged be presented to us. We are above all things to enjoin the strictest rest, avoid irritating diet, employing only the very mildest articles of food; and when abscesses show a disposition to form, we are to promote them by poultices, and other appropriate surgical means, including suitable incisions where the decomposed parts of the fœtus appear about to work their way to the surface.

195. Dr. McKeever dwells rather fully on the after treatment, when the woman has been delivered, in the case of a ruptured uterus. He calls the attention of the practitioner to one very important point, and that is, the danger of a portion of the intestine protruding through the rent of the uterus, and becoming strangulated by the contraction of that organ. This may ensure the death of a patient who but for it might recover. It may be guarded against by carefully introducing the hand into the uterus, and returning the piece of intestine into the abdomen, "following it with our fingers for some distance within the lips of the wound," so as to place it in a position unfavourable to its re-entrance into the uterus. This very in-

dispensable preliminary having been attended to, we may give the patient "an opiate and a little wine," order her attendants to keep her as free from disturbance as possible, and relieve the distressing vomiting, which is so prominent a symptom in these cases, by the exhibition of the small effervescing draughts containing a little tincture of opium in each. To check abdominal inflammation, thirty or forty leeches may be applied to the abdominal parietes; and should the state of vascular action authorise venesection, it may also be had recourse to. In extreme cases, the rules laid down in the chapter on Puerperal fever and peritoneal inflammation should be attended to. In all cases, the diet must be particularly mild, but nutritive. The placenta most commonly will be found in the vagina, and we shall then have only to remove any clots from the part; but should we have occasion to introduce the hand into the uterus for the extraction of the placenta, it must be done with the most marked precaution. Dr. Denman records a very sad case of a practitioner having incautiously passed his hand through the uterine rent, and destroyed his patient by seizing the contents of the abdominal canal instead of the placenta.

196. We have laid it down as essential that where the child has not receded, the promptest means are to be adopted to effect delivery. Those means will in general be instrumental; but if the feet of the child can safely be brought down, an operation which in a ruptured uterus requires the utmost gentleness and precaution, we may sometimes give material aid in this way, and relieve the wounded organ of much of its action. The forceps, or the crotchet, will, however, be our most frequent resource. When we use the perforator, having far less resistance to the receding of the child to expect, than with an uterus acting efficiently, we must beware of aiding that receding power by applying force in the direction of the axis of the pelvis. On the contrary, the perforator must be applied some-

what diagonally,, so as to have a degree of support from the vaginal walls. This precaution is the more necessary, inasmuch as the making pressure on the abdomen, by means of an assistant, in order to secure the fœta head from sliding upwards while we are penetrating it with the instrument, is apt to give intolerable pain from the great sensibility of the wounded organ.

197. It is most desirable to acquire a knowledge of any premonitory symptoms that may help to put us on our guard against this formidable accident in order that we may adopt all measures in our power which offer any prospect of arresting it. Dr. M'Keever agrees with other authorities, that a succession of tedious and difficult labours appears to render a woman more liable to rupture of the uterus, and that when we are called upon to attend one who has several times been delivered with difficulty, by instrumental or other artificial means, or one who has given birth to dead children after protracted labours, we should have recourse to every possible measure to promote our patient's immunity from uterine rupture. But, during labour, when the patient has very violent pains, or as the popular phrase has it, "showers of pains," with little intermission, and little or no corresponding effect in advancing the child's progress, or perhaps even the dilatation of the os uteri; and when the pains appear to be as it were concentrated at one circumscribed point, as at the sacrum or pubis; and where, in the short intervals of the pains, the patient speaks of experiencing "a tight, crampish feel of the abdomen, accompanied with flushing of the face and great frequency of the pulse—if she be very restless and throw herself about the bed as if wild with agony, crying out that 'she is ready to burst, if something be not done for her,' we have reason to dread this accident, and should act with the utmost vigilance and precaution." The measures which Dr. M'Keever recommends in such a case are a large bleeding from the arm, and the immediate exhibition

of an enema of starch and laudanum. But, should these measures fail in procuring a discontinuance of the alarming symptoms, assistance to facilitate delivery ought not to be delayed. It should not, however, be overlooked, that some women are vastly more irritable and impatient than others, and we are not to be so prompt in taking alarm, where we perceive this tendency to immoderate clamour to be connected with a peculiarly excitable natural temperament. I never experienced more ungovernable violence of this description than in my attendance on a very healthy and well-formed young woman of about two-and twenty years of age, who was safely and speedily delivered of a seven-months' child of very diminutive size, though it lived, to the surprise of every one. And I have seen a fine young woman, the picture of health and strength, so fearfully violent, that the attendants were obliged to hold her, to prevent serious consequences from her impetuosity. But there is little difficulty in drawing the line of discrimination in such cases, for in the morbid cases, there will always be symptoms of decided constitutional disturbance and exhaustion, which we need not fear to confound with the mere impatience of ungovernable violence.

REMARKABLE CASE OF LACERATION.

198. Dr. M'Keever gives a very curious case in his essay "On Lacerations of the Uterus and Vagina," which is particularly interesting to the physiologist. In this remarkable case, the injury was more in the substance of the vagina than in that of the uterus. The patient was a robust healthy woman, in her second confinement. She was attended by a midwife before other aid was called in, and had suffered thirty hours of severe, unremitting labour, with excruciating pain in the small of the back, violent vomiting, and a very feeble pulse

Another practitioner had visited her before Dr. M'Keever: he found the fœtal head firmly impacted in the pelvis, and proceeded to perforate it, as the patient appeared to be in the most imminent danger of speedy dissolution. Not only was the child's head very large, but the pelvis was far from being capacious dimensions. Delivery was effected, and the placenta easily removed. But it was discovered that, high up at the posterior part of the vagina, extending round to the neck of the bladder, and communicating freely with that organ, there was a considerable rent. A wine and anodyne draught was administered to the patient after delivery, and she obtained some refreshing rest. The next day, one of her female attendants perceived, in the vagina, a substance of about six inches in length, and of a smooth, shining appearance, which, through ignorance, she mistook for a portion of the membranes, and passed a bit of rag through the *loop* it formed. It, however turned out to be a loop of the intestines, that had protruded through the rent; and no evacuation by the rectum could be obtained. Vomiting, tenderness of the abdomen, and other symptoms of strangulated hernia occurred. The labour in this case had commenced the 29th of July, and on the 2d of August an attempt was made to bring away this protruding substance, but was necessarily given up from the violent sufferings it occasioned. Severe symptoms now set in, differing little from those attending strangulated hernia; and in two days afterwards, Dr. M'Keever saw the patient. On making an examination, he found "near a yard and a half of her bowels coiled up under her, black and to all appearance putrid, while the cylinder of the intestine was in many places so incomplete, that the finger could be passed freely up and down through the rents." He saw that the only chance his patient had for survival was the establishment of an artificial anus in the vagina. Palliatives were administered to her, such as the small effervescing draughts, opiate, to relieve the

stomach; stuping the abdomen, and a pill of three grains of calomel with half a grain of opium, every four hours, with cold chicken-broth as her ordinary drink. A table-spoonful of yeast, (barm) was occasionally given to her at her own request. The mortified portion of the intestine came away, an artificial anus was formed in the vagina, fæces were copiously discharged, and considerable alleviation of the poor creature's sufferings was the result. The vagina was occasionally syringed with a warm decoction of camomile flowers and the pills of calomel and opium, with the cold chicken-broth, were continued. In a short time the tenderness of the abdomen subsided, an appetite for food appeared, and the patient began to amend rapidly. She eat eggs, took beef-tea and milk, and felt a return of hunger in about an hour after making her meal. The excrementious matter which she voided through the vagina was at first of a fluid consistence, of a light yellowish colour, and "altogether free from the ordinary odour of fæces." In short, it seemed that the artificial anus communicated with the intestinal canal above the part where process of fæcation commences, and, consequently, that the animal economy was now deprived of that process altogether, and still continued to progress very fairly! Appetite, health, and improvement in appearance, even to plumpness of body, went on, until the patient became capable of enjoying most kinds of food—but Dr. M'Keever's extensive report of the case, of which we are compelled to be satisfied with a summary, gives an interesting detail of the comparative effects of various articles of diet, as this woman advanced towards perfect recovery. Fat of every kind appeared to disagree with her during her convalescence, and cabbage, turnips, potatoes, and almost all vegetables, except ripe apples and parsnips, she had to use with the greatest caution, owing to the severe flatus they caused, and their tendency to pass in a semi-digested state. She had a very great desire for liquids, but fermented liquors were in-

jurious to her. In about two years, she was attacked with violent bearing down pains, accompanied by tenesmus, which lasted, with much severity, for about half an hour. She then passed by the rectum, a large quantity of "dark, pitchy-coloured fæces, about the consistence of balls of firm wax." For some time she continued to pass her evacuations through both passages. That through the vagina gradually decreased, and at length ceased altogether, the natural function per rectum being perfectly restored. She ultimately became pregnant, and was safely delivered of a living female child, and without any thing adverse in the labour. The vagina had become quite restored to a healthy condition.

199. The above deeply interesting and encouraging case shows how much a practitioner in midwifery should refrain from despondency. It demonstrates, also, that after the communication has been temporarily cut off between the small and the large, or fæces-producing intestines, that communication may, after a long lapse of time, be restored, and the impaired animal functions be again completed. Our chief object, however, in giving the foregoing summary of this case is as a caution to midwives, not only to avoid meddling with what they do not understand, but also to lose not a moment in sending for a duly-qualified practitioner when the case goes beyond their skill. If the protruded intestine, in the above case, had been early discovered in the vagina, and immediately returned, instead of having a yard and a half of the intestinal tube pulled through the rent, and lacerated, the protracted sufferings of this poor woman would have been spared.

200. Rents of the vagina, when they do not unite of themselves, are to have their edges made raw, and to be united by a few stitches of suture.

CHAPTER XIV.

PUERPERAL CONVULSIONS.

201. Though convulsions may occur during pregnancy, especially during the last three months thereof, as well as at any or all the stages of parturition, it is chiefly with the last-mentioned that we are here particularly concerned. Three species of convulsions, as connected with pregnant women, have been noticed by writers.

FIRST SPECIES.

The first, and that of incalculably most frequent occurrence, is the one which bears the character of *eclampsia*. This is considered to be accompanied with determination, and active congestion of blood in the head. The symptoms are very marked: usually the paroxysm is ushered in by involuntary contractions of the muscles of the face and jaw, with spasmodic action of general, though sometimes of a more partial prevalence, often exhibiting tetanic violence, stiffening the entire frame, curving the spine backwards, throwing back the head, making the abdomen appear more prominent, and even shaking the bed most perceptibly. There is frequently foaming at the mouth, a very distinct hissing sound through the teeth, which Dr. Denman regarded as peculiarly characteristic of puerperal convulsions; the tongue is sometimes protruded, and often wounded by the teeth, so that blood is mixed with the foam. The respiration is laborious, and more or less stertorous. The eyes are sometimes open, fixed and staring, or rolling about, and more or less injected, also prominent. The countenance and neck are often tumid, with redness or lividity prevailing in

proportion to the degree of active determination to the head. At times the limbs are tossed about, but at other times they are rigid. The heart will often be found to beat strongly ; but there is a total abolition of consciousness. These symptoms may intermit with a comatose state, in which the patient lies entirely unconscious, and with stertorous breathing ; or a gleam of consciousness may take place, though without her being aware that anything unusual had happened, The paroxysms may recur with more or less frequency, or may terminate after one or two repetitions,

SECOND SPECIES.

202. But convulsions of a description evincing rather irritation than active congestion of the nervous centre may take place, and be consequent upon exhaustion, such as that which results from profuse hæmorrhage, &c. In these, the countenance wants the swollen and livid character remarkable in the foregoing species. The paroxysm is sometimes preceded, as well as succeeded, by sinking and faintings. The eyes are not suffused, though wild and staring, or rolling, and sometimes sparkling. The pulse is slender, hard, or wiry. The urine has been pale-coloured and copious. The limbs are less rigid, and thrown about more than in the preceding species. On the cessation of the paroxysm, the patient is more likely to experience a restoration of consciousness than in the other case, but she may not retain it during the case.

THIRD SPECIES.

203. A third species of convulsions, occurring more frequently during pregnancy than parturition, has much of the hysteric character, and may be attended with the globus hystericus, violent palpitation, laughing and crying, and the other charac-

teristics of hysteria; and sometimes, though rarely, we may witness some blending together of those species.

PREMONITORY SYMPTOMS OF NO. 1.

204. But the tetanic, evincing active determination and congestion, is the species of convulsions with which the practitioner in midwifery will far most frequently have to contend in the puerperal patient. This is believed by many good authorities to be preceded almost always by premonitory symptoms, though they are often so slight as to escape attention. However, it may be useful to enumerate them, in order that the vigilant practitioner may be upon his guard. The patient, it is said, complains, sometimes shortly before the attack, at other times for several days preceding it, of lassitude and depression, and of a sort of anomalous indisposition. Disorder of the stomach is not an unusual premonitory symptom, with a sense of anxiety and oppression of the epigastrium. Headache, with a sense of weight, giddiness, vertigo, or drowsiness, may be felt. A sensation as of sparks or other objects floating before the eyes, chiefly giving the idea of brightness, may likewise be experienced; and also some embarrassment of speech. Just before the seizure, the expression of countenance may be seen to alter; the sight may fail, either partially or entirely; and so may the hearing likewise. The eyes become haggard and vacant, with a fixed unmeaning stare, and a dilated pupil. Noises in the ears, with acute, splitting pains in the head, may now be superadded to the foregoing symptoms. The face and neck may begin to flush; the pulse to become more full, at first more frequent, and subsequently slower; tetanic rigidity at the wrists, spasmodic affections of various muscles, twitches of the muscles of the face, shudderings, running through and giving a shock to the whole frame, together with a disturbance of the respiration, may all usher in the loss of consciousness, and the full developement of the convulsive action as described above.

TREATMENT.

205. In the violent and tetanic species, there is but one opinion among respectable writers on this complaint as to the necessity of blood-letting. Some advise it to be taken from the jugular vein, or the temporal artery, as having the speediest and most marked effect ; while others, considering the difficulty of taking blood with safety from the jugular vein of a convulsed patient, content themselves with bleeding either from the arm or the temporal artery. The very first care, however, ought to be the placing of a cork between the patient's teeth, to prevent her from injuring her tongue. In puerperal convulsions we are not to bleed to deliquium ; but many, among whom is Dr. Collins, advise us to draw the blood in a full stream, to make a speedy impression ; others think it better to detract the quantity we intend at different times, and after short intervals, than at one operation : adapting those repetitions to the recurrence of the convulsions and the state of the patient. The use of tartar emetic may enable us to diminish the amount of venesection. Dr. Copland, who, in his *Dictionary of Practical Medicine*, has treated of convulsions at more length than most writers, strongly advises that, simultaneously with the flow of blood, or immediately after the use of the lancet, we employ cold effusion on the head, or even apply pounded ice in a bladder thereto. He also recommends that we should lose no time in administering ten grains of calomel in combination with five or ten grains of powdered camphor, with or without an equal quantity of musk. This is to be made up with a little sweet butter, and introduced over the root of the tongue, by means of an ivory letter-holder, the handle of a spoon, or any convenient instrument. To this should immediately succeed two or three drops of croton oil on the tongue—"never to be omitted." A cathartic and anti-spasmodic enema he also advises

to be thrown up without delay, and to be immediately repeated should it be promptly rejected. Either of the following formulæ he submits for the composition of the enema, viz. No. 1. \mathcal{R} : Colocynthis pulpæ incis. \mathfrak{Zj} ; Aquæ \mathfrak{Zxij} . Coque paulisper, et cola ; dein adde, Sodæ chlorid. (vel Sodæ sulphatis) \mathfrak{Zss} ; Syrupi Rhamni cath. \mathfrak{Zss} . Misce. Vel. No. 2. \mathcal{R} : Camphoræ rasæ \mathfrak{Dj} ; Olei Terebinth. \mathfrak{Zss} .— \mathfrak{Zj} . ; Olei Olivæ \mathfrak{Zjss} . ; Decocti Avenæ \mathfrak{Zvii} . Fiat enema. For the efficacy of this treatment, he pledges his professional character in the most decided manner, having, he assures us, employed it with the most unequivocal success. He says,—“ The combined effects of those will seldom fail of producing a solution of the paroxysm. As to the effects of camphor in this complaint, with respect to which there is some difference of opinion among obstetric authorities, he speaks favourably, provided it be exhibited after depletion ; and he also agrees with most able writers on puerperal convulsions, that, in this disorder, where it assumes the character of eclampsia, or is attended with great fulness about the head, or stertorous breathing, depletion may be carried further than in almost any other malady. Other authorities, as for instance, Chausier, advise local bleeding from the nape of the neck, occiput, or from the epigastrium, after general depletion. Several professors of midwifery object to the exhibition of opium* in puerperal convulsions. Others approve of it, but only after depletion. Blood-letting should always precede it, and Dr. Copland recommends the opium always to be combined with camphor, or with the sub-carbonates of the fixed alkalis, or with both ; and he is more partial to it in the second or third species than in the first. The application of opium to the abdomen, and to the soles of the feet

* A case in the ‘Lancet’ represents the use of opium as productive of uniform relapse.

has had its advocates in this complaint, and Dr. A. Blake advises us never to omit the introduction of two or three grains of solid opium into the rectum when convulsions occur. There is also a considerable difference of opinion among practitioners as to the propriety of exhibiting emetics in puerperal convulsions. Unless blood-letting be premised, they may be unsafe; but after proper depletion, if we have reason to believe that the stomach contains objectionable ingesta, an emetic may not only be innocent, but useful. However, cathartics appear to be followed by effects more unequivocally beneficial, usually bringing away very offensive dejections, and preventing a recurrence of the paroxysm.

206. With regard to the necessity of promptly delivering the patient, there is also some difference of opinion. But when this can be effected, after due depletion, and without violence, it appears desirable to accomplish it without protracted delay, more especially when we discover indications of the convulsions being strongly associated with uterine irritation, for they have been attributed to a variety of causes, and very frequently to irritation of the bowels by an accumulation of *fæcal* matter; and also to distension of the bladder, spinal irritation, &c. But, on the state of the *os uteri* will mainly depend our measures for delivery, if convulsions occur during the first stage of labour. Irritation of that sensitive part would be more likely, on rude efforts to dilate it, to bring on, than to suppress convulsive action. Persons have been found to advise the dividing of the *os uteri* by a surgical operation, when it was rigid and intractable, in order to facilitate delivery even at the expense of a proceeding so highly objectionable; but most people would be more inclined to try the local application of *Belladonna*, when advocates for expeditious delivery, than thus to inflict injury on a very delicate organ. M. Chaussier speaks in warm terms of a pomade of *Belladonna*, to be made in the following way, and declares it efficacious in causing relaxation

of the uterine orifice. He takes two drachms of the extract of Belladonna, an equal quantity of water, and about an ounce of prepared lard. These he triturates together, introduces about the bulk of a small nut of the mass into a female syringe, and thus applies it to the os uteri, with the effect, he assures us, of removing the rigidity, and enabling the labour to proceed in about half an hour. The method of affording artificial assistance will necessarily vary according to circumstances. Where the os uteri is in a favourable condition, and the waters unevacuated, turning the child and bringing down the feet is the method that the practitioner will, it is to be presumed, generally adopt; where the head has advanced into the pelvis, the forceps or the vectis will be chosen; and in the desperate case of a deformed pelvis, or where the head has become impacted and immoveable, we may be obliged to have recourse to the perforator and crotchet. But Dr. Copland, an accoucheur himself, assures us that the means above recommended seldom fail, and it is *only when they do* that he considers us called upon to proceed to artificial delivery.

207. Various other measurer have been advised to be had recourse to in this alarming complaint, but may be regarded as merely auxiliary rather than primary, even should we approve of them. Dr. Copland recommends, in order to promote uterine action, and, after having adopted every other necessary measure, that, before we proceed to deliver, we administer either the borate of soda, in doses of from 20 to 30 grains, or the ergot of rye.* If the os uteri be not altogether in a satisfactory state of dilation, he prefers the former to the latter of those medicines. As powerful agents in removing convulsions, he again and again dwells upon the injection of turpentine clysters, sometimes with camphor assafoetida, or valerian; the affusion of a stream of cold water on the head, after the

* We doubt the propriety of the ergot in convulsions.

cutting off the hair, without going to the trouble of shaving it, is, however, a *sine qua non* with Dr. Copland; and thus, he says, we can produce the desired effect, while we detract a much smaller quantity of blood than is commonly thought necessary on such occasions. Where the patient has been comatose, or apoplectic, blisters to the nape of the neck, and sinapisms to the ankles and the calves of the legs, have been adopted as adjuvants to the primary measures.

208. Convulsions may occur after the birth of the child, and often do. The placenta must then be looked to in the proper manner, and in every case of convulsions the bladder must be duly attended to. In a very severe case of puerperal convulsions, which occurred in the Queen's Lying-in Hospital, so late as the *ninth* day after delivery, the patient having previously suffered from puerperal fever, from which she was then just convalescent, and where the convulsions appeared to have been brought on by a distended state of the urinary bladder, the paroxysms were alarmingly frequent, and were attended with profound coma and asphyxy. In this formidable attack, the venesection had been copious; the vein, however, was re-opened, and a stream of cold water was kept playing upon the vertex while the blood was flowing: at the same time a clyster of turpentine and camphor was thrown up. The patient rapidly revived; and, when deglutition was restored, purgative medicines were administered. The woman recovered completely.

209. It is worthy of remark that, in those attacks of puerperal convulsions, the lower extremities are often extremely cold, and the pulsation in them weak and indistinct, at the same time that the arteries of the head and neck appear to be in inordinate action. It is as if a transfer of nearly all the functions of the circulation were made from the inferior to the superior parts of the system. Now this curious fact seems to

sanction the advice, that we employ the hip-bath (warm) while we continue cold affusion to the head. Thus may we count upon equalizing the circulation with the greatest possible rapidity and effect.

210. Dr. Denman speaks of puerperal convulsions as a complaint confined to places having a crowded population, and as scarcely known in genuine country practice. He makes one observation which we consider rather far-fetched, namely, that convulsions are more likely to occur "among those who too zealously devote themselves to music." For our part, we do not see how devotion to music would be likely to cause morbid excitement of the nervous system. There appears, however, to be more solidity in what this eminent writer attributes to "the particular influence of the air" in bringing on the complaint; and we think that our experience induces us to agree with Dr. Copland, and others, that convulsions are "most frequently produced during warm *electrical* states of the atmosphere." It has been thought, and Dr. Burns seems to be quite of this opinion, that the spinal marrow is more the immediate organ or agent affected in this disorder, than the brain itself. An attempt has been made to account for this affection of the spine, in the case in question, by supposing that the uterine irritation was propagated along the course of the nerves to the spinal centre, and that from this the propagation was continued to the brain. This idea has induced some practitioners to examine along the spinal column for spots that showed irritability or tenderness, and to apply to such parts means calculated to remove congestion, &c., and thus to restore the normal function of the nerves. Dry cupping has been tried for this purpose, and so have been liniments, or even blisters. As to blistering the head, that may be proper when coma of an obstinate nature has succeeded to the convulsive paroxysm. Dr. Copland advises us, for the purpose of discovering the condi-

tion of the spinal column, to “press a warm sponge along and between the vertebræ.” He thinks that when the convulsions are partial, more advantage would be derived from local depletions, than when they are general.

211. The present Dr. Rigby, in an able course of lectures on Midwifery, has thus described the effects of active congestion of the brain, and the influence of bleeding thereon:—“With a slight degree of determination to the head, you have head-ache; as it increases, the pain of the head disappears in proportion as delirium makes its appearance; with a further degree of cerebral congestion, epilepsy comes on, and this may be followed or preceeded by coma. In this condition, if the patient be largely bled, the continuous convulsions will cease, probably leaving her in a state of stertorous coma: diminish the congestion still further by a repetition of the bleeding, purgatives, &c., the coma will go off, but delirium returns, and by still further reduction of the impetus of the circulation to the brain, this state [the delirium] will be removed, the patient returns to consciousness, with intense head-ache, which in its turn gradually subsides also.” Wigand, a late practitioner at Hamburg, gives the following sort of graduated scale of the developement of the symptoms of puerperal convulsions, and the corresponding or synchronous action of the uterus. It may serve to point out to the practitioner the exact progress which the attack is making:—“1. Pain in the præcordia. 2. Head-ache. 3. Dull soporous state, with occasional wandering, but yet without any visible convulsive movements. 4. Disappearance of sopor; restlessness, grasping the objects about her, moaning, &c. 5. Spasmodic retraction of the head to one side, immediately followed by general convulsions, retraction of the head, with frightful distortions of the face, &c. 6. Remission of the convulsions, and return of the soporous state, but now without wandering.” As to the corresponding state of the

uterus, we have "1 and 2. Probably the first commencement of the labour pains. 3. Perfect quiet, and intermission from labour pains. 4. Commencement of a regular and effective labour pain. 5. Complete cessation of labour, or partial or general spasm of the uterus. 6. Uterus perfectly quiet."

212. It has been said that the child has been suddenly expelled during convulsions. This, perhaps, has been the case; but the author has been supporting the perinæum, while the foetal head was making evident progress at the very moment that a convulsive paroxysm came on, and, instead of any further advancement of the labour thereby, the uterine action instantly and invariably ceased, and the child's head *repeatedly receded*.

213. Dr. Rigby advocates nearly the same principles of treatment in this terrific complaint as those which we have put forward with approval from Dr. Copland, viz., bleeding to the full extent that the symptoms might demand; the pouring of cold water on the shaved head; stimulating enemata; purgative medicines; to the calves of the legs, either sinapisms, or flannels wrung out of hot decoction of mustard; blisters to the nape of the neck, and strong doses of calomel and nitre. But with regard to blisters to the nape of the neck, it should be remarked that these are apt to slip down during the patient's struggles, and spread irritation over a considerable portion of the back. An accession of cool air to the apartment ought never to be neglected during puerperal convulsions; and sprinkling the room with aromatic vinegar, or common vinegar, may be useful. Bleeding in this complaint paves the way for artificial delivery. It both relaxes the os uteri and vagina, and diminishes the risk of inflammation from the use of instruments. Dr. Rigby makes a curious remark with regard to the influence of those convulsions on the state of the patient's blood. He says, "There is a fact I have several times observed when bleeding a puerperal woman for cerebral congestion,

viz., that after the first dark venous blood which was below the ligature was expelled, the blood has not only become much more florid, but quite thin, and, as it were watery, so much so that in one case I could distinctly see the edge of the bleeding cup through the stream. I merely mention it, gentlemen, to draw your attention to it, for I am quite unable, at present, to explain the nature of the phenomenon." It is one worthy of investigation, however, and would lead a person to suspect, 1st, that through the suspension of the normal nervous influence the ordinary changes did not take place in the arterial blood at the extremity of the circulation where the blood passes from the arteries into the venous capillaries and branches; and 2ndly, that the violent pressure of the spasmodic muscles forced a large quantity both of unaltered arterial blood and also of the lymphatic fluid into the venous system. This appears to be some solution of the mystery.

Dr. Denman writes strongly in favour of the free use of the lancet in this complaint, and apprehends no danger from depletion, though we may find it necessary to support the strength, or nervous energy of the patient with cordials after such active blood-letting. He attributes the infrequency of inflammation after convulsions, in modern practice, to the liberal detraction of blood, now so well established among judicious practitioners in the tetanic or epileptic species of this disorder. Forcible dilatation of the os uteri he considers likely to increase convulsions, and peculiarly so. When we have reason to apprehend a convulsive attack, Dr. Denman thinks that by venesection, attention to the state of the stomach and bowels, the prudent exhibition of opiates, and the occasional use of the warm bath, we may frequently prevent it. He was partial to gentle emetics if given at suitable times, but seemed to set no value on enemata. He says nothing of cold effusion on the head, but very properly adverts to the very powerful aid which

sprinkling cold water briskly, and with little intermission, on the patient's face, during the paroxysm, affords us in suspending the convulsive action. To the efficacy of the latter practice the author can himself bear the most decided testimony. It is said that the influence of thus sprinkling the patient's face is most manifest in the hysterical species; whether it be or not, the author has seen it unequivocally useful in the epileptic or tetanic form, and in no case should it be left untried. Dr. Burns appears to agree in the propriety of the principles we have above approved of. He cautions us against the imprudent use of opium in this complaint, lest we thereby convert the disease into fatal apoplexy; and very judiciously observes, that copious venesection and alvine evacuations ought to precede the exhibition of this narcotic. He adds that it is only admissible when acute and obstinate pain, in the head or stomach, has resisted the lancet and the application of a sinapism to the part affected. As to the removal of the hair, previously to our use of the cold affusion on the head, whether we shave the part or merely clip the hair off with a scissors, the front locks may be permitted to remain as an ornament for the gratification of the patient. Dr. Burns says that when labour commences, a clyster should be given, on the slightest feeling of uneasiness in the head.

215. But though the eclampsia, or epileptic species of puerperal convulsions, be the form that will in general challenge the attention of the practitioner during parturition, still, as the other species do occasionally occur at that period, it is fit that we should bestow a little more notice upon them. The species which follows exhaustion, more especially from profuse hæmmorrhage, is likely to be the next in frequency after eclampsia. This has been termed *epilepsia ex anæmia*. Dr. Dewees, however, styles it the *apoplectic*, while he calls the first species, of which we have treated so fully, the *epileptic*,

and the third species, of which we shall speak by and by, the hysterical. In the *apoplectic*, or *ex anæmia* kind, the visage is pale, the eye inanimate, the pulse feeble, sometimes the patient, in the intervals between the paroxysms, is very restless bordering upon delirium, and complains of intense headache. When we have the premonitory symptoms in this species, they are of much shorter duration than in the other. Our treatment of this kind of convulsions will necessarily vary from that we employ in eclampsia; for if we were to use the lancet profusely in the exhausted condition of our patient, we might speedily extinguish vitality altogether. We should freely admit cool air, actively sprinkle the face with cold water, and administer the aromatic spirit of ammonia in small doses of cinnamon-water. Prompt delivery is in this species far more advisable than in the former. If, however, that have taken place, as is perhaps more frequently the case in exhaustion *ex anæmia*, opium combined with diffusible stimulants will be a very suitable remedy for restlessness and headache. It may be given in the cinnamon-water in combination with the aromatic spirit of ammonia. Powdered camphor with extract of hyoscyamus is highly lauded by Dr. Rigby in this species, as acting both as a stimulant, and also tending greatly to allay irritability of the nervous system. Sleep is extremely desirable in this species, and indeed without it we can expect but little relief: as in delirium tremens. The combination of opium, camphor, calomel and tartar emetic, according to the formula given in the appendix, the author can confidently recommend as a suitable medicine in this case. Bland nourishment, in small quantities, ought frequently to be given. Dr. Copland speaks favourably of the *ammonio-tartrate of iron* in this species of convulsions, alone or combined with hyoscyamus. The sulphate of quinine with hyoscyamus and camphor he also praises; the decoction of cinchona, or infusion of arnica or serpentaria, with

liquor ammoniæ acetatis and æther; warm negus, with aromatics, and stimulating embrocations or liniments over the epigastrium likewise receive his commendation. He here also advises the cold affusion to the head, if there be the least appearance of congestion or inflammatory irritation; and directs warm diaphoretics, gentle antispasmodics, and other means of supporting the manifestations of vital power in the nervous system, and of promoting the secreting and excreting functions.

216. Of the *hysteric* species, it now remains to treat. When puerperal convulsions occur in this form, we are told by experienced authorities that the patient is generally young, or of an extremely delicate make, with pale face, delicate features, and of an irritable constitution; her spirits variable, she is pettish, anxious and fearful, startled at the slightest noise, and intolerant of conversation in the room. Spasmodic twitches of the muscles of the eyes and mouth are frequently observed while she is slumbering, sometimes her eyes are perceived to roll about during her sleep, and she is apt to start in her slumbers. She frequently makes water, which is of a pale colour. Slight rigours, alternating with flushes of heat, are often attendant on this kind of constitutional affection. The patient is exceedingly sensitive, on an examination per vaginam, and has the os uteri thin, hard, and more than ordinarily painful to the touch. Her pains are irregular, at one time strong, at another time feeble. She complains of ringing in the ears, has the globus hystericus, and experiences palpitations of the heart shortly before the accession of the fit. The face is said to be less convulsed, but the larger muscles of the body even more violently so, than in the other species. She is at times very unruly, and has the posterior muscles of the body so strongly contracted as to describe an arch backwards. She does not appear to be altogether lost to consciousness during the paroxysm, as she

instantly starts on the face being sprinkled with cold water, and even resists a vaginal examination. Attention to the state of the bowels, which are frequently disordered in these cases, is esteemed far more necessary than venesection. The sudden dashing of cold water on the face, and the administration, as soon as possible, of the spiritus ammoniæ foetidus in a little cold water, are useful means to employ. The latter produces eructations from the stomach, and gives speedy relief. If the pulse be strong and full, the detraction of blood will be useful, and promote labour, and with delivery those hysteric convulsions very often terminate.

217. As too many practitioners appear little aware of the nature, and too undecided in the treatment of puerperal convulsions, we have felt it our duty to go rather fully into the subject. Such of our readers as wish for still further information on the disorder will do well to consult the elaborate article on "Convulsions" in Dr. Copland's *Dictionary of Practical Medicine*.

CHAPTER XV.

ABORTION.

218. Abortion is distinguished by systematic writers from premature labour. The former term they consider to apply to the expulsion of the fœtus at any time previous to the commencement of the seventh month; and after that period the occurrence is named premature labour. The expulsion of a mole or false conception is styled false delivery; and when the

ovum comes away before the sixth week of pregnancy it is called a miscarriage.

219. Numerous causes have been assigned why some women have such a tendency to abort; but the reason of it is sometimes very obscure. At times diseases of the fœtus or its appendages would appear to be in fault; and there have often been good grounds for attributing abortion to the prevalence of a syphilitic taint in either or both of the parents. Some females seem to have such a predisposition to abortion that they will expel the ovum from the slightest causes imaginable; such as the least mental emotion.* Others, on the contrary, require severe bodily injuries to effect it before the regular period; while others appear to undergo the premature expulsion of the fœtus without any assignable cause whatever but the mere

* The *moral* treatment of abortion has been very strongly impressed on our mind by Dr. E. G. Leeson. By *Moral* treatment, we mean the obtaining the confidence of our patient in favour of our line of treatment, to such a degree that she will rest her hopes most decidedly on its fortunate result. We believe this to be of as much importance as the *physical* propriety of the prescriptions we order, if not of more. And when we consider the acknowledged influence which the imagination of the female has over the functions of the uterus, we shall not feel surprised at the success of moral treatment. To set the patient's mind at rest, therefore, and to inspire her with confident hope that the line of treatment you have adopted will cure her, is the surest method to obtain success. Dr. Leeson has mentioned to us cases in which this method has been remarkably triumphant. But the manner in which it is to be applied to each individual case must depend on the peculiarity of the patient, and the intelligence of the practitioner. The principle, however, is easily understood, namely,—gain the confidence of your patient, and allay her fears, and you will be almost sure to succeed when you have set her apprehensions at rest.

Dr. Leeson considers opium very injurious to hysterical females threatened with abortion. He feels by experience quite justified in denouncing it.

influence of an acquired habit, acting upon the system at an accustomed period. It is believed, however, that certain structural or physiological conditions of the uterus may predispose to abortion, such as too great rigidity of its fibres, and such an unyielding state of its walls as would oppose due distention of the organ. Again, too great sensibility and contractibility of the organ, founded upon some peculiar irritability of the constitution, other speculators have assigned as the cause. It has also been said that too great a determination of blood to the uterus and ovaria, either from a peculiarity of the constitution, or from some extraordinary local stimulus affecting the nerves of the uterine or adjoining parts, is sometimes to blame. Feebleness and relaxation of the cervix uteri have likewise been accused of tending to occasion abortion. An atonic state or the entire uterus, produced either by tedious or severe labours, or by such debilitating discharges as leucorrhœa, has also been considered capable of producing untimely expulsion, or evacuation of the uterine contents, from the organ thus becoming unfit for the completion of its functions. A sort of chronic inflammation, causing a cartilaginous, or schirrus, or other diseased structure of the uterus, or the growth of morbid substances or tumours therein, have been put down among the reasons of abortion. But these generally are causes that we can seldom detect, or profit by the knowledge of, so as to obviate their effects; though it be proper to enumerate them when writing of a complaint of such obscurity as the present too often is. Certain states of the atmosphere have been supposed capable of occasioning *epidemic* abortions. In the constitution of the mother, the sanguine temperament, the plethoric habit, a peculiar disposition to hæmorrhage even without general plethoric indications, habitual mænorragia, irregularity of menstruation, great debility of body, excessive sensibility of the nervous system, cachexy, effects of mercury, masturbation in

early life, spinal disease, impregnation too late in life, hereditary disposition, tight lacing, too early impregnation after delivery, too luxurious, or too debilitating diet, sleeping on too soft and warm beds, excitement of the uterine organs by too much sexual indulgence, diseases of a febrile, pestilential, or exanthematous character, have all in their turn come in for blame as productive of abortion.

220. A considerable enumeration of exciting causes has likewise been made, but they are too numerous for us to think of going into a special detail of them. The most obvious are, sudden fright, accident, great excitement of the passions, such as anger, excessive joy, and even disappointment, grief, or long-continued anxiety of mind; immoderate laughter, violent hiccup, severe paroxysms of coughing, or vomiting, or the use of very active drastic purgatives, more especially those which have a specific action on the rectum; large blood-lettings, more particularly from the feet; abuse of hot-baths and prediluvia; rupture of the umbilical cord; uterine hæmorrhage.*

221. It has been thought that any cause of abortion will have a more decided effect at the regular periods at which the female had been accustomed to menstruate, than at any other time, owing to a greater tendency, then, to congestion in the uterine vessels, than at any other times. Certain emenagogues, such as savine, hellebore, juniper, &c., and that uterine specific,

My esteemed friend, Dr. Leeson, has drawn my attention to a remarkable case of hæmorrhage which occurred to one of his patients, on the thirteenth day after her delivery, apparently owing to a sudden exertion she made to take up one of her children. In this case the uterine hæmorrhage was rapid and fearfully copious—equalling that which frequently takes place in parturition. Herein we have a proof that it is difficult to assign limits to the occurrence of this frightful malady, and that we should, therefore, labour to combat any circumstances that might dispose thereto.

the ergot of rye, have been supposed adequate to effect abortion. But some women will resist the strongest causes, and proceed in their utero-gestation even after the criminal exhibition of such medicines and recourse to other means in conjunction with them. Stimulating injections into the vagina have also been had recourse to for the wicked purpose of prematurely expelling the fœtus. In the article on bringing on early labour, we have already spoken of dilating the os uteri and rupturing the membranes as a mode of artificially bringing on uterine action.

222. As to the symptoms of abortion, sometimes we have but little warning of it, the ovum, if it come away during the first two months, frequently, in its then diminutive state, doing so without causing much pain or hæmorrhage, and without any marked premonitory symptoms. But it is not always, nor even usually so: for most commonly there are very marked pains, coagula are formed, and enveloped in one of these, the ovum often comes away, and thus escapes our observation. The more advanced the stage of utero-gestation, however, the more considerable are the pains and hæmorrhage, as a general rule; and they often then exceed even those occurring at the regular period of ordinary parturition. It is thought that those abortions which proceed from causes acting slowly, such as chronic diseases, and morbid affections of the fœtus or its appendages, excite more constitutional symptoms than those from other causes.

CHRONIC CASES.

223. M. Desormeaux, a very eminent professor of the obstetric science, has detailed the following symptoms as occurring in chronic cases of abortion:—The abortion, he says, is “generally preceded by horripilations or rigors, followed by febrile

movements, by heat, want of appetite, nausea, thirst, pain in the loins, lassitude, leipothymia, syncope, coldness of the extremities, palpitations, lowness of spirits, paleness of the countenance, tumefaction or lividity of the eye-lids, deficient brightness of the eyes, fœtor of the breath ; a feeling of weakness in the abdomen, or of cold about the pubis ; of weight about the anus and vagina ; flaccidity and diminished size of the breasts, sometimes with a slight discharge of serum ; a flow of a sanious, rather than of a sanguineous fluid, and afterwards of blood, either in a fluid or grumous state, from the vulva ; diminished motion of the child, soon afterwards followed by perfect cessation of the motion ; lessened bulk of the abdomen or of the hypogastrium ; uterine pains, which become more and more frequent and severe ; progressive dilatation of the uterine orifice, and prominence of the membranes ; and, lastly, expulsion of the amniotic fluid and fœtus, followed, at an indefinite time, by the placenta. Most frequently, the discharge of blood does not cease until the placenta is expelled."

224. When the abortion proceeds, not from slowly operating causes, but from those of a more sudden, energetic and exciting nature, it is sometimes succeeded by pains, together with an unusual sense of weight in the loins, and at the lower part of the vagina ; horripilations or rigors, general uneasiness, and cardialgia and nausea are likely to occur. One of the first and most continued symptoms is an appearance of blood, succeeded by a discharge of sanguineous serum, like that denominated "a show" in regular parturition, and lapsing into considerable hæmorrhage. Sometimes the hæmorrhage is profuse from the very onset, and only ends with the expulsion of the fœtus and its appendages. Preceding the expulsion of the uterine contents, frequent lancinating pains occur in the direction of the umbilicus and the vulva. When the pregnancy is in an advanced stage, the lochial discharge, after-pains, milk-

fever, and other sequelæ of ordinary parturition, take place in a greater or less degree.

225. Hæmorrhage, when in a decided degree, is usually attributable either to partial detachment of the placenta, or to rupture of the funis. Detachment of the placenta may arise from a congestive state of the uterine circulation, which, as we remarked [221], is to be most apprehended at the ordinary periods of menstruation, and, may, perhaps, be dependent on a deficiency of vital (nervous) endowment, compared with the extraordinary supply of blood to the part. Hence, we can easily imagine uterine contraction to be in an under ratio in comparison with the amount of the circulation, and the placenta partially disconnected instead of being entirely detached, as it would be by active contraction of the uterine substance. But, most commonly, either of those causes, partial detachment of the placenta, or rupture of the funis, will be occasioned by some accident, and those accidents which are considered equal to such an effect are a violent shock, kick, fall, or other injury; such as compression of the uterine region, or even violent riding, dancing, or coition. Sometimes, however, spontaneous contraction of the uterus not easily to be accounted for, but probably owing to irritation of the nerves from some obscure cause, may bring about the entire phenomena of abortion.

226. The more sudden and violent the cause, and the more advanced the stage of utero-gestation, together with the less tendency of the female to habitual abortion, the more violent the symptoms and hæmorrhage we have reason to expect. Where a relaxed state of the cervix uteri exists as a cause of abortion, there usually is but little pain in the process, and women aborting from this condition of the cervix are remarked to do so, in successive pregnancies, each time at an earlier period than that at which the abortion had previously occurred. Where the abort-

ing seemed connected with a rigid state of the fibres of the fundus and body of the uterus, on the contrary, the woman, each successive pregnancy, appeared improving in her ability to sustain utero-gestation, until it gradually arrived at the regular period of parturition. This rigidity of the fundus and body of the uterus is supposed most commonly to take place in females who are subject to painful and scanty menstruation. One would imagine it to indicate insufficient development of the vascularity of the uterus, and consequently a defective supply of nutriment to the foetus and its appendages. Indeed, we cannot reasonably suppose that the ovum can suffer disease or decay, except through some inability of the uterus to maintain its functions, or some separation of the connection between it and the foetus. It is *possible* that disorganisation, or rather malorganisation may occur in the foetus, but it is not likely that those inherent defects would lead to its expulsion. The relaxed state of the cervix uteri may generally be suspected on a vaginal examination. Yet there is much doubt whether it can be so discovered in time to avert the consequences; still the evidence may be of utility to us, to regulate our treatment in a future pregnancy. It is in such a (relaxed) state of the uterus that the spontaneous and not very painful process of abortion is to be looked for, there being but little resistance to the escape of the ovum.

TREATMENT.

227. In this we must be guided by the condition, constitution, and habits of the patient. Our first object, of course, is to prevent abortion; when this cannot be done, we endeavour to palliate; and, when the expulsion of the ovum has taken place, we proceed to the administration of such remedies as may be adapted to obviate deleterious consequences. Where there is an evidently plethoric state of the system, a cooling,

anti-phlogistic regimen must be adopted, and persevered in at least till the period has passed over at which abortion was accustomed to happen. In addition to a cooling diet, chiefly consisting of vegetables and fruits, acidulous and cooling beverages should be made use of; and it may be requisite, also, where the evidences of plethora were very decided, to employ moderate venesection, particularly in the first instance. But we must not venture upon detracting blood in large quantities, and what we do take away had better be done by small bleedings cautiously repeated according to their effect. Local as well as general bleeding may sometimes be prudent; but in either case the operation is immediately to be followed by an opiate. Abstinence from exertion, and from sexual intercourse should be impressively advised; and the recumbent posture and tranquillity of mind must generally be recommended. A large, airy, cheerful apartment should be occupied by the patient, who ought to lie upon a mattress, in preference to a feather-bed, and without too large a supply of bed-clothes. Every thing ought to be done to amuse her mind, and thereby to prevent temporary confinement to her apartment from being irksome to her. If there be no symptoms of plethora, but, on the contrary, those of relaxation and debility be present, the regimen is to be of a more generous description, and even tonics should be prescribed. The mineral acids; infusions of the bitter tonics, such as calumba, or quasia, with the carbonate of soda and tincture of hyoscyamus, have been recommended by Dr. Copland in such a state. The same authority also advises the sulphuric acid, combined with small doses of laudanum, or with small doses of colchicum or digitalis, as extremely useful in such cases. Some light wine may be allowed daily; and where very gentle exercise can be ventured on, that is to say, where the symptoms are not too urgent, swinging, or gentle carriage-exercise, will be beneficial. The

shower-bath, or the cold or tepid hip-bath, of sea-water, or even general bathing, have been very much countenanced by numerous authorities under such circumstances. Where there may be an objection or obstacle to those we have mentioned, sponging the lower part of the trunk, the hips and thighs, with vinegar and cold water, or squeezing cold water from a large sponge, and from some height, on the hips and pelvic region, may be substituted with benefit. A prevalence of nervous symptoms will indicate the exhibition of antispasmodics and anodynes together with the treatment described. And, when hæmorrhage appears, a lavement of cold water, or cold or astringent injections per vaginam, are considered advisable to check it. Every measure that can improve the constitution and add to its vigour, without exciting, is suitable in those cases of debility: such as change of air, tonic mineral waters, either internally exhibited, or in the form of bathing; or the *tinctura ferri sesquichloridi*, of the last London Pharmacopœia, in bitter infusions, or sulphate of zinc in the compound infusion of roses. Besides these, Dr. Copland speaks highly of the beneficial effects of the balsams of Peru, of that of Canada, of Chio, of copaiba, as well as of the common and Venice turpentine in conjunction with the powder of Cinchona, the powder of Rhubarb, and the subcarbonates of the alkalies and of magnesia. Hoffman's Balsam of Life, the formula for which we give in the appendix, is lauded by several of the Continental practitioners. It is recommended, besides, that the loins be rubbed, for some time, both morning and night, with a liniment such as those for which we have given formulæ in the appendix; and that the cumin-plaster, or the compound pitch-plaster, or some other strengthening plaster, be applied to the loins. An anodyne is to be prescribed at bed-time where abortion is threatened; and where diarrhœa with tenesmus is present, small emollient and anodyne enemata ought to be ad-

ministered, and likewise suppositories, composed of opium and the emplastrum plumbi, placed in the rectum. However, while we avoid the use of saline and stimulating purgatives under such circumstances, we are not to permit indurated fæces to remain lodged in the lower intestines. For the purpose of removing such a cause of irritation, we are to have recourse to injections of an emollient and gently aperient nature, and to very mild laxatives. The aperients which Dr. Copland recommends to our notice in this case are, the soluble tartar, and cream of tartar, in form of an electuary with the confection of senna; castor oil with the addition of a small quantity of laudanum; and the super-sulphate of potash. These he regards as suitable aperients in pregnancy. And such are the preventative means which have been deemed advisable in threatened abortion.

228. Dr. Denman advises persons subject to abortion to travel about by easy stages, not making a hasty journey, but amusing the mind by variety. This, however, pre-supposes the symptoms not to be very urgent, or the rambling tour to have been undertaken before they set-in. When pressing symptoms have shewn themselves, no such feeble palliative could be trusted to. When hæmorrhage has commenced, Dr. Denman proposes to act upon the general principles so fully adverted to. He pronounces oil of turpentine to be "certainly a very powerful remedy in protracted hæmorrhages;" but Dr. Copland bears the strongest possible testimony to its efficacy in every kind of uterine hæmorrhage. He says, "In every case of hæmorrhage from abortion, as well after delivery as at the full period, but particularly when the hæmorrhage proceeds from inefficient contraction of the uterus and retention of the ovum, or some portion of the appendages of the embryo, I have prescribed, with complete success, an enema, with from one to two ounces of the oleum terebinthinæ in a pint of water-gruel."

Sometimes, however, this physician employs the turpentine epithem to the hypogastrium, in addition to exhibiting the enema; and, certainly, a hot flannel wetted with oil of turpentine, and applied over any part where spasmodic action or congestion prevails, is one of the most powerful, immediate, and safest means we are acquainted with for allaying disturbance, and promoting the vital functions in an organ. This the author has had many and unequivocal opportunities of observing.

229. When our preventive measures have not been attended with success, and the hæmorrhage continues to increase, cold applications to the vulva, and to the inside of the thighs may still be tried, together with that very favourite mode with several practitioners of great eminence, namely, plugging-up the vagina. We have before said that Dr. Burns recommends this to be done with linen, while others prefer soft sponge for the purpose. Dr. Ryan advises either old linen or sponge to be made use of, and, whichever of the two we employ, is, according to him, to be saturated with a solution of alum, smeared with some oleaginous substance, and of such size as completely to fill up the vagina, at least the upper part of that canal. Dr. Copland informs us that opium, with the superacetate of lead, given at first in a very large dose, and repeated according to circumstances, should also be exhibited; but he seems to regard this, as well as the vaginal plug, as "chiefly serviceable where the hæmorrhage continues after expulsion of the embryo." Dr. Burns, however, is an advocate for the plug even before the expulsion takes place. He tells us that, "If the pregnancy be not advanced beyond the fourth month, it will be decidedly better to trust to a smart clyster, and restraining the hæmorrhage by means of the plug." And again, "By stuffing the vagina, we shall often find that the discharge is safely stopped." It is true that he has but little expectation of averting abortion after uterine contraction has really

commenced, and gives it as his opinion, "That when the action of gestation ceases, it cannot be renewed, and that universal contraction of the uterine fibres is the criterion of this cessation." This is all very true; but as we have numerous instances of the first approaches of abortion having been successfully checked, and have no very sure criterion to measure those approaches with such certainty as to determine when the unequivocal marks of expulsion being just impending are actually present, it becomes our duty to employ all the means we safely can to avert the evil. Unquestionably, hæmorrhage has often been checked in threatened abortion, and adhesion of the partially detached placenta or membranes (from the separation of which the hæmorrhage must necessarily have occurred) appears manifestly to have taken place, so as to allow pregnancy to proceed. Now, there is nothing so very marvellous in this, when we consider what surgery has revealed to us with regard to detached fingers, noses, &c., adhering to their kindred parts, if vital action were in any degree existing in the vessels. And all this ought to encourage us to persevere in the employment of such measures as have been sanctioned by experience, and crowned with success, until every shadow of hope forsake us. The vaginal plug, therefore, may, it seems, be confided in as some source of security against the dangerous progress of hæmorrhage, for multiplied experience has so declared; and it promotes the dilatation of the uterine orifice, and the more favourable detachment of the entire ovum, even when it does little more. It is, therefore, a good rule of practice to have recourse to the plug.

230. Dr. Burns is high in his encomiums on cold-bathing as preventative of abortion. He says, (in general weakness) "The use of the cold bath, and wearing flannel next the skin, constitute the most successful practice."

231. Where a syphilitic taint had been considered the cause

of abortions in previous pregnancies, a mild course of mercury has been prescribed with apparent advantage as a preventative.

232. After the embryo has been expelled, it is necessary for the practitioner to satisfy himself that the embryotic appendages have also entirely come away, as the retention of any part of them in utero may be attended with very bad effects, and keep up a dangerous discharge. Dr. Copland recommends ergot of rye to be given in such a case, in the form of a decoction, adding to it as much borate of soda as the strained liquor will dissolve; this, he says, will seldom disappoint our expectations. The cold infusion of the ergot, or its exhibition in cold water, is preferred by others to its decoction. The foetal appendages sometimes are arrested at the os uteri and the upper part of the vagina, and should in such case be brought away by manual aid, the practitioner making it a point, after abortion, to examine for them.

223. It is curious what varieties occur in those attacks of an abortive tendency. Sometimes the placenta will be retained after the foetus has been expelled, and remain a considerable time in the womb, being either converted into a large fleshy substance, clothed with a smooth membrane, being the remnant of the amnium, occasionally containing cysts and hydatids; and in such case it has been called the "mole of generation." It has happened, also, that the placenta has, several weeks after the foetus, been discharged in a putrid mass, or in a sanies of a brown colour and foetid smell. The foetus itself has been known to be retained, and to undergo various changes, either putrefactive alterations similar to those we have just mentioned, or a species of ossification, or, according to some authors, even a kind of petrefaction, being retained during the natural life of the mother. At other times, it has been converted into what is termed *adipocire*, a substance found in

cemeteries, and constituting a very peculiar product of animal decomposition. Occasionally, the fœtus, &c., have been retained in the uterus until the full period of gestation had been completed, though deprived of vitality for several months, and then been discharged in a softened and almost macerated state, but free from putrefaction. In the latter case, the membranes had remained entire, and preserved the lifeless mass from the decomposing action of the air. Now these things show how very imaginative is the idea thrown out by Dr. Denman on the cause of abortion, namely, that the fœtus having ceased to grow, or to live, the uterus had, through a sort of instinct, rejected it! For he says:—"The ovum has been in such a state, as to have become wholly unfit for the purpose which it was designed to answer; so that if we could believe that there was a distinct intelligence in every part of the body, we should say, it was concluded in council, this ovum can never come to perfection, and it shall be expelled." Now the simple truth appears to be, that the original disease, whether functional or structural, was in the uterus itself, and this was the originating cause of whatever lesion took place in the ovum. And this brings us to the last branch of the treatment, that is to say the remedial measures we are to pursue after abortion, to remove any morbid condition that either had occasioned it, or been its consequence. But it is at times found that the fœtus in abortion will be expelled alive; and that, in twin cases, one child will die in utero, and be nevertheless retained till the full time, when it will be expelled together with the living child.

234. When the uterus has disburdened itself either by its own unaided efforts, as is usually accomplished in abortion; or, as is sometimes proper in the more advanced stages of gestation, approaching closely to a case of premature labour,—with the manual assistance of the practitioner; we are narrowly to look into the condition of the patient, and the degree of con-

stitutional disturbance under which she suffers. If any portion of the appendages of the fœtus had been retained, such a circumstance is often found to be capable of producing great irritation, and symptoms approximating to those we shall have to describe in a species of puerperal fever. The bowels are liable to become greatly disordered, and febrile affection of the typhoid species to show itself, while these are accompanied, usually, with a very offensive discharge from the vagina. In those cases, Dr. Copland, who is himself professionally an Obstetrician, and who writes very ably on this branch of medical science, advises the decoction of cinchona to be exhibited, either with the addition of muriatic acid, the liquor ammoniæ acetatis, or either of the following prescriptions:—

No. 1.

R: Misturæ camphoræ ℥j; Liquoris ammoniæ acetatis ℥ij; Acidi acetici pyrolignei mxxv; Syrupi zingiberis ℥ss. M. Fiat haustus ter quaterve in die sumendus.

Vel,—No. 2.

R: Camphoræ rasæ gr. ij—iij; Extr. Cinchonæ Res. gr. iij; Conserv. Rosæ, q. s. ut fiant pilulæ ij, ter die capiendæ. He also recommends a turpentine enema to be administered every second or third day in cases of this description; and that injections should be made per vaginam of a solution of the chloruret of Lime, or of Labarraque's liquor. The following is the formula he gives for this injection:—

No. 3.

R: Liquoris Labarraquii Chloro-sod. ℥jss: Misturæ camphoræ ℥vijss; M. Fiat injectio. In order to check troublesome diarrhœa, he administers the chloruret of lime in the following forms, according to preference for pill or solution:—

No. 4.

R: Chlorureti calici, gr. viij—xvij; Pulveris Tragacanth. comp. ℥jss; Sirupi q. s. ut fiant pilulæ xxiv, quarum capiat binas ter quaterve in die.

Vel,—No. 5.

R: Chlorureti calcis gr.vj—xij; Tinct. calumbæ ℥iij; Aquæ menthæ viridis, vel aquæ carui, vel aquæ anethi, ℥vj—vijss; Fiat mistura, ejus sumat cochl. j vel ij larga ter quaterve quotidie. The chloruret of lime he also recommends to be exhibited in water-gruel, as an enema, once or twice a day, each enema to contain from viij to xij grains of the chloruret; and this is certainly a very powerful remedy in ataxic complaints, and where there is any putrefactive tendency. The other measures to be pursued, to remedy the debility so frequent after abortions, will be those generally conducive to constitutional restoration, such as change of air, wholesome, nourishing, light diet, the mineral acids, &c. The nervous symptoms may be prominent, and even run into those of Hysteria. When this is the case, antispasmodics with mild tonics and cooling aperients will be indicated.

235. We strongly recommend to our readers an article on abortion, together with an excellent one on uterine hæmorrhage, in Dr. Copland's *Dictionary of Practical Medicine*. In those articles they will find almost every thing that can be profitably advanced on the subjects. Dr. Copland, not without reason, questions the propriety of Dr. Blundel's directions, in abortion, to inject the uterus with a pint of water in which a scruple of alum has been dissolved. He considers that this measure, if at all advisable, is most likely to be serviceable in cases where a portion of the ovum has been retained in the

uterus, and is passing into decomposition. Perhaps, even in that case, a weak solution of the chlouret of lime may be more appropriate.

CHAPTER XVI.

PUERPERAL FEVER.

236. Of this alarming disease there are several forms, some of an exceedingly formidable description, and occasionally appearing to be epidemic, if not decidedly infectious. But there is one form of the distemper which Dr. Rigby has brought forward in a lecture, a few years since, and concerning which he has concentrated a great deal of information from various sources. The form to which we allude is, that in which the uterus seems to be the principal and primary seat of disease, and to produce the febrile symptoms we shall afterwards describe, —whether that organ be labouring under mere functional disorder, or actually have run into true inflammation of its substance. As this is a somewhat safer and more tractable form than where extensive peritonitis prevails, and may run into the latter, if not promptly attended to, we shall, in the first instance, confine our notice to it: more especially as it is imagined to be more or less attributable to the mode of conducting the last stage of labour.

237. This species is by various authorities thought to arise most commonly from the retention of coagula in the uterus and vagina, which, running into the putrefactive process, are ab-

THE UTERINE SPECIES OF FEVER.

sorbed into the circulation, in the first instance causing a kind of phlebitis of the uterus, and, consecutively, all the phenomena connected with inflammatory affections of the venous system. This view of the subject is countenanced by some recent discoveries made on the blood, with the microscope, by Surgeon George Gulliver, proving the actual existence of pus in the blood, in hectic and in some other fevers, &c. In the affection of which we are now to treat, and which Dr. Rigby regards as "inflammation of the uterus, more especially of its veins and absorbents," the symptoms of the complaint generally show themselves on the second, third, or fourth day after delivery. Sometimes the attack is sudden, and with but little of premonitory symptoms. Perhaps a severe griping pain occurs in the lower part of the abdomen, preceded by a sharp rigour, and usually more or less to one side. On examining the uterus through the abdominal parietes, we perceive it to be harder and larger than natural, and excessively painful to the touch, more particularly so if our pressure be sudden instead of gradual. The pulse is quick and small; the tongue is furred, whitish anteriorly, but becoming browner and more thickly coated as we examine it towards the root; the countenance is anxious. There is one diagnostic mark between this and the regular peritoneal inflammatory complaint, and that is, that in the latter the abdominal parietes are exquisitely sensitive of pressure, or mere contact, which immediately causes distressing pain; while in the more uterine complaint now under consideration the pain is not experienced until the pressure affects the uterus itself, showing that to be the special seat of disease. The lochia, too, has either not appeared at all, or has abruptly ceased, and the same remark is generally equally applicable to the secretion of milk.

233. But the disorder may come on in a more gradual manner, the after-pains being of a very aggravated degree of inten-

sity, and of long duration, the entire abdomen participating in those pains, but the uterus, especially, being severely affected, and becoming still harder during the paroxysms of them. In this gradual accession of the complaint, *sudden* pressure greatly increases the pains ; but, if the pressure be gradually increased, it seems rather to afford a temporary alleviation, or to benumb the painful part, while, on the sudden removal of the hand, the suffering becomes afterwards considerably augmented. Those severe after-pains assume a more continued character, until they at length seem to settle down into a fixed and uniform inflammatory state of the uterus. This may run into a tympanitic condition of the abdomen, with considerable distention, together with exquisite sensibility of the abdominal surface, and all the other symptoms of peritonitis, showing that the inflammation has extended its influence to the peritoneal surface. In some cases, the skin continues hot and dry ; but usually it becomes cold and clammy ; the anxiety of the countenance increases ; the pulse becomes still more indicative of severe disturbance, growing extremely rapid and weak, and sometimes very irregular ; the stomach grows irritable and evacuates its contents ; the tongue and lips are still more encrusted with sordes, and the lips at times exhibit a deep brownish red colour ; the surface is smooth and very dry ; and severe diarrhoea is commonly the last stage of the disease.

239. when those aggravated symptoms come on, we may be sure that inflammation has made extensive progress, and this opinion is usually confirmed on a post-mortem examination, which often discloses such an effusion of coagulable lymph as suffices to glue the intestines together ; and the peritoneal cavity sometimes contains a large quantity of sero-purulent fluid. The intestines are distended with gas, and their peritoneal covering, as well as that of the uterus, exhibits unequivocal marks of inflammation. But those appearances of decided

inflammation are not present in all cases of fatal termination : for they are sometimes wanting altogether, leaving us to conclude that the disorder in the latter cases was functional rather than structural. The appearances of inflammation in the uterine appendages have been thus described by Dr. R. Lee :— “ The surface of the broad ligament has been red and vascular, and partially or completely embedded in lymph and pus ; the loose extremities of the Fallopian tubes have been of a deep-red colour, and softened ; and deposits of pus, in a diffused or circumscribed form, have taken place in the cavities or sub-peritoneal tissues. Between the folds of the broad ligaments effusions of serous and purulent fluids have also been found. Numerous important changes have likewise been observed in the structure of the ovaria ; their peritoneal surface has often been red, vascular, and imbedded in lymph, without any visible alteration of the parenchymatous structure ; or their whole volume has been greatly enlarged, swollen, red and pulpy. Blood has been effused into the vesicles of De Graef, or around them, and circumscribed deposits of pus have been found dispersed throughout the substance of the enlarged ovaria. In several cases the entire structure of the ovaria has been reduced to a broken down vascular pulp, no traces of their natural organisation being left.” Even a small degree of such inflammatory action in the uterine appendages would be sufficient to cause barrenness.

240. It has been shewn by the minute researches of Dr. R. L. in this complaint, that the uterine veins, more especially the spermatic vein of the side to which the placenta had been attached, had undergone inflammation, and contained purulent matter in numerous cases. The veins were found filled with pus or a sanious purulent fluid, or impervious from false membranes or firm coagula of blood or lymph, their coats considerably thickened, and frequently of a dark-red colour. This

state of phlebitis he attributes to the "communication indirectly established between the venous system and atmospheric air from the separation of the placenta after delivery." And if this conjecture be correct, and it is in some degree corroborated by the well-known deleterious effect of the admission of air into a vein, it becomes an additional reason for precaution in detaching the placenta, which, as we have noticed in the proper place, should not be done except through the medium of such a contraction as will close the uterine vessels. Dr. Kirkland considers the putrefaction of clots, permitted to remain in the uterus after delivery, as the cause of this malignant condition, and, indeed, his reasoning and the progress of the symptoms to which he appeals in support of his opinion give it considerable weight. The late Mr. C. White, of Manchester, took a similar view of the subject, and not only deprecated the exhibition of large opiates to allay after-pains, before the latter had opportunity to accomplish the object for which nature intends them, namely, the expulsion of coagula, but also advised that the patient, after delivery, should assume so much of the erect posture as would facilitate the discharge of those coagula from the uterus and vagina, and, therefore, was opposed to too long a confinement to the horizontal position, as favouring both the retention and the absorption of coagula. Dr. Rigby indulges in the same opinions, and says that he was in the habit of making his patients in the ward, frequently sit up for a few minutes at a time in the course of the day, and, to ensure this being done, expressly forbade them to take their food or suckle their children in the supine posture, but directed them to sit up with a shawl over their shoulders, and when they had occasion to evacuate the bladder to do it kneeling. Dr. Kirkland had his patients supported by assistants in an erect posture as soon after delivery as was justifiable, and encouraged them to take a few steps while thus supported, in order to promote the

discharge of coagula ; and he is greatly opposed to an over-hasty delivery of the placenta. Another authority, of not very modern date, namely, Burton, is likewise so adverse to the too prompt removal of after-pains by opium, that he says, " I have no doubt but those patients who die from the eighth to the fourteenth day, whose uterus has been inflamed with the symptoms above-mentioned [and he gives a tolerably full enumeration of them] have been injured by the too free use of opiates."

241. Injecting the vagina with warm water is a measure much recommended, and is productive of very beneficial effects. Such precautions are only reasonable, as well as cleanly, and, Dr. Rigby thinks, ought never to be neglected.

TREATMENT.

242. In the species of puerperal fever we have now described, early bleeding is considered by Dr. Rigby and others to be neither necessary nor beneficial. In this respect it differs from the inflammatory peritoneal affection, as we shall afterwards have occasion to show. This remark is particularly applicable to those cases in which the pulse is compressible without evincing any degree of hardness, but is soft and weak as well as rapid. The best mode of treating this form of the complaint is in the first instance to evacuate the bowels freely by very large clysters, afterwards giving ten grains of the compound powder of ipecacuanha, every three hours, till the pain is gone. Besides this, the abdomen is to be covered with a large poultice of linseed-meal, applied as hot as the patient can bear, and so arranged that a layer of the cloth in which it is applied shall be between it and the abdominal surface. If, after the pain has ceased, the abdomen should continue sore, and the pulse rapid, leeches should be applied, and a mild purge given. Such is Dr. Gooch's method of treating this

complaint. But attention to the character of the pulse and of the pain is very necessary, lest we overlook the onset of real inflammation. And the practitioner ought always to bear in mind the tendency of this milder form to merge into the violently inflammatory one. Dr. Rigby says:—"The only circumstances, I apprehend, under which venesection ought to be employed in this affection, are where the pain is constant without intermission, and where, besides its rapidity, the pulse betrays a degree of wiry resistance to the finger which can never be mistaken. In this case, the blood drawn will show all the usual marks of inflammation, and the relief procured will be proportionably great. On the other hand, where the pain, although severe, is not constant, but the patient experiences every now and then a slight abatement of its severity, and a short intermission altogether; where the pulse, although rapid, is soft and resists the finger but feebly, we shall seldom produce any permanent effect by the bleeding; the pulse becomes weaker, but its rapidity, so far from being diminished, is rather increased. The pain may be relieved for a short time, but it almost always returns as severely as it was before the venesection." Yet he admits that when the complaint has lapsed into a case of actual inflammation, bleeding must be used with the greatest promptitude. But Dr. Rigby does not altogether content himself with the treatment which we have quoted from Dr. Gooch: to this he adds the administration of calomel in full doses. He does not, however, exceed ten grains at a time, and with it he combines a little of either James's Powder, or the Antimonial Powder, together with ten grains of Dover's Powder; these he makes up into pills, and is most gratified when they produce a copious perspiration, at the same time applying the hot linseed-meal poultice, with a fold of linen between it and the abdomen. Some hours after, (or the next morning if the calomel, &c., had been given late at night) he

administers a saline purgative draught, to act upon the bowels ; and this draught he prefers to be composed of the sulphate and carbonate of magnesia dissolved in peppermint water with a little tartar-emetic, to determine to the skin. The vagina he directs to be repeatedly washed out by injections of warm water ; and the poultice to be repeated if the tenderness of the uterus remain in any degree. The patient is to suckle her child sitting up, if possible, and to have a liberal supply of gruel, arrow-root, &c. Dr. Rigby assures us that generally this course of treatment removes the tenderness and hardness of the uterus in twelve or eighteen hours, makes the pulse fuller and softer, the tongue cleaner and more moist, restores the secretions from the kidneys and bowels, the lochia, and the milk. The calomel thus given does not commonly excite salivation.

THE REAL PERITONEAL PUERPERAL FEVER.

243. For the ordinary soreness of the abdomen, which women often complain of after labour, Dr. Denman was in the habit of ordering a warm flannel, well sprinkled with any kind of spirit, to be applied to the whole abdomen, and occasionally renewed. But, where symptoms of genuine P. fever occur, such a palliative would be of no utility. Dr. D. notices the great contrariety of opinions which formerly existed regarding the causes and nature of puerperal fever ; nor does he appear to have entirely made up his own mind on the subject. Of the complaint we have just treated of, he does not seem to have entertained a clear view, for he says, “ A similar treatment may be enjoined with equal propriety for an inflammation of the uterus, omentum, peritoneum, or intestines, or perhaps any part of the abdomen ; whether the disease remain local, or a fever be produced by its influence being extended to the constitution in general.” After what has been said in the fore-

going section, it is needless to observe that more of distinction is of practical importance in the treatment of puerperal fever ; and this fact will become more and more evident before we shall have concluded the present chapter. The symptoms of the severe form of this complaint may show themselves at a very early period after labour, or at any intermediate time between parturition and several weeks after it. A sense of debility, together with wandering pains in the abdomen and fixing ultimately in the hypogastric region, may be regarded as very common precursory symptoms, A rigor of more or less severity is some index to the amount of disease we may expect. Very soon after the pain fixes in the hypogastrium, the abdomen swells considerably, sometimes regaining the size it had acquired before delivery, and becoming exquisitely tender and painful to the touch. Pains in the back, hips, and sometimes in one or both legs, and generally in those parts that are apt to be sympathetically affected in labour, are not unusual in this complaint. Vomiting of a green or yellow bitter matter, nausea and loathing at the stomach, with an offensive taste in the mouth, are also among the indications of the disorder. Either the lochia will be suppressed, or changed in quantity and appearance ; the latter is more common than the former. The cerebral symptoms are sometimes very marked, at other times but inconsiderable, and occasionally hysterical symptoms are present : the patient at times may conceit she hears a musical performance, or take other conceits, showing that the nerves presiding over the senses are disturbed in their functions. The bladder becomes irritable, and the urine, in several instances, is frequently voided, in small quantities, remarkably turbid, and with pain. Tenesmus and diarrhœa have been known to set in at a very early period of this disease, but the time of their occurrence is uncertain, though they seldom are altogether wanting. The patient's countenance is expressive

of extreme anxiety and distress. The pulse is most important in this complaint, as one of the surest directors of the measures which the practitioner ought to pursue. Some writers on puerpal diseases consider that a distinct line should be drawn between decided peritonitis, and what they designate the proper puerperal fever, and which they describe in such a manner as would lead one to regard it as a complication of the complaint we have noticed in the foregoing part of this chapter with peritonitis. It is not improbable, indeed, that this is a correct view of the subject, as such a complication is very likely to take place. And other disorders may be engrafted on the same inflammatory stock, for the puerperal fever is very liable to assume the character of any prevailing epidemic. It may, therefore, be more practically useful to describe the distinguishing symptoms of peritonitis, which invariably demand prompt and decided depletion; and then to point out the signs which will require a modification of the depletory treatment. This will be less confusing than a long catalogue of symptoms *en masse*, in a case where discrimination becomes of high importance.

244. When acute inflammation of the peritoneum prevails, the pain and irritability of the abdomen are intense, the slightest touch, however superficial, can scarcely be borne, the pressure of even the bed-clothes causes much distress, and the patient, to relieve herself from the uneasiness which tension of the abdominal muscles occasions, brings up the knees so as to flex the lower extremities in some degree on the pelvis, and relax the parietes. She lies on her back, often finding too painful the attempt to turn on her side. There may be and usually is a rigour succeeded by febrile flushings, and the pain and uneasiness we have just noticed are soon followed by hot skin, parched lips, a white, dry tongue, and not unfrequently some heaviness in the head, though not of the same confused

and severe character as attends the more complicated complaint. The pulse is either full and round, or else hard and contracted, it is seldom less than 100 in a minute, and does not often exceed 110; while in the more complicated disorder the pulse mounts up to 140 or even much higher, is weaker, softer and more compressible, usually undulating to the finger, and giving a sensation to the touch of an artery imperfectly filled. The secretions, including the lochia and the milk, are either checked and vitiated, or suspended.

TREATMENT.

245. When such sthenic symptoms present themselves, the mode of treatment is not doubtful. The lancet is at once to be employed, and blood to be drawn from a large orifice, until faintness occur; nor is this faintness to be immediately removed by the administration of restoratives, or the application of stimuli to the nostrils, or otherwise, but it must be allowed to continue for some time, and to go off of itself, in order that it should produce its full effect on the system, and check the inflammatory action. The next thing to be done is to get the system under the influence of mercury. With this view, give five grains of calomel, made up into two pills with two or three grains of solid opium, immediately after venesection.* The abdomen is then to have twenty or thirty, or even a greater number of leeches applied to it, and after those have dropped off, a flannel bag is to be filled with camomile-flowers scalded with boiling water, and placed over the leech-bites. If the bag be sprinkled either with spirits, or with oil of turpentine, it will tend still to produce a greater determination from the

* This, though the most general method, differs in some degree from that subsequently pointed out.

peritonæum to the surface. At the expiration of two or three hours, the patient is to be again examined, and if the state of the pulse and that of the abdominal pain, &c., should require it, venesection together with the pills must be repeated. But the second bleeding need seldom be carried to the same extent as the first. Usually, however, the measures here advised, if promptly adopted, afford relief, conquer the pain, moderate and soften the pulse, and improve the appearance of the tongue, which now acquires a natural moistness, the calomel and opium are to be repeated, but in diminished doses, and it may be well to combine mercurial inunction, some writers say fumigation, with the internal medicine, until a slight degree of soreness has been produced in the mouth. If constipation prevail it should be removed either by a very mild laxative or an emollient enema; but severe purging is to be carefully avoided. The peritonitis is seldom found to resist this treatment. That which we have in a subsequent part of this chapter described as adopted at the Dublin Lying-in Hospital, is, indeed, somewhat more decided, but manifestly on the same principles.

COMPLICATED PUERPERAL FEVER.

246. In what is by some writers regarded as the proper puerperal fever, or the complicated disorder, we find decided rigors, followed by heat and flushings of the face, and severe pain of the head; but the pulse, as we have before observed, becomes as rapid as 140 or even 150 beats in a minute, within a very few hours of chilliness having gone off, and the pulse has the feeble character above described. The pain in the abdomen is very considerable, but the cerebral symptoms very seldom destroy consciousness. Sometimes the abdominal pain is somewhat circumscribed in its position, being referred

to the inferior and anterior region of the uterus ; but it does not always continue confined to that part, extending itself over the remainder of the abdomen, and, occasionally, as it extends, leaving the part first attacked comparatively free. The abdominal swelling becomes very great as the disorder advances, arising partly from effusion into the cavity of the peritonæum, but chiefly from a highly tympanitic state of the intestinal canal, which appears to secrete an amazing quantity of æriform fluid. This gaseous accumulation impedes the action of the diaphragm, and occasions dyspnæa, rendering respiration both difficult and painful. The tongue, even should it at first be but slightly affected, which is often the case, soon becomes coated with a brown fur, or dry, red, and glassy. Vomiting, as we have remarked, is not an uncommon symptom ; and very profuse diarrhœa, even attended with involuntary evacuation of the alvine dejections, is occasionally, though not invariably, experienced. The lochial discharge, when present, is generally dark-coloured and offensive : but this is not uniformly the case, and the milk is usually diminished, if not entirely suspended, as the disorder progresses. It has been asserted by practitioners of much experience in this complaint, that in the regular puerperal fever, as in the milder or purely uterine species of which we at first treated, the pain is in the first instance deep-seated and decidedly uterine. Now, if this be uniformly true, it is corroborative of the idea thrown out above, that the complaint is a complication of the uterine and peritoneal affections, and that its varieties, and therefore its proper treatment, will depend upon the degree in which the uterine phlebitis, or the genuine peritonitis should happen to predominate. Phlebitis is always of an adynamic or typhoid nature, while inflammation of the peritonæum is, in its first stages, attended with violent vascular action, though it soon wears out the vital powers and lapses into debility. Therefore, the practitioner

must keep a close eye on the nature and progress of the symptoms, never forgetting, however, the tendency even of the peritoneal complaint to degenerate more and more into prostration of strength ; and, indeed, the amplest experience testifies that it is in the early stages alone we have any reasonable hope of controlling this formidable disorder by depleting measures. The state of the skin is rather variable in what is styled the true puerperal fever, often being moist and perspiring.

TREATMENT.

247. It is not always that venesection can be freely employed in the form of puerperal fever now under consideration, and, to authorise it in any degree, there should be present some hardness of the pulse. But leeching the abdomen can seldom if ever be dispensed with, and to this should be added either the application of the flannel bag* with the scalded chamomile-flowers, &c., or stuping the abdomen as herein-after advised. The calomel, with opium or some other appropriate adjunct, is to be given ; the opium at first will perhaps be more bene-

* There are practitioners for whose opinion we entertain the highest respect, and we have to enumerate Doctor Leeson among them, who entertain a very marked objection to the great irritation which they conceive extensive leeching of the abdomen in this complaint to occasion. On this account, and because of the uncertainty of the quantity of blood which leeches will extract, they prefer general bleeding, the amount of which they have under direct control. Dr. Leeson prefers the application of the scalded chamomile flowers in a flannel bag, on account of its lightness, to either the stuping or the linseed-meal poultice. We shall content ourselves with making this observation without entering further into discussion of which method deserves the preference. There may be cases in which reason would point out the one rather than the other.

ficial in the quantity of two or three grains, where we irritation runs high; and, if necessary, at the expiration of a few hours from the first dose, this combination may be repeated in the same quantity, that is to say, unless suitable relief shall have been obtained. If improved symptoms, however, should have appeared, the quantity is to be diminished to one grain and a half of opium and two of calomel, every two or three hours, together with mercurial inunctions, &c., until the system be got under the mercurial influence, the pulse becoming slower and fuller, and a relief from the distressing symptoms, will be the test of the success of the treatment, and the warrant for lessening the quantity of the medicine. Where the bowels require to be opened, a draught composed of half an ounce of castor oil with two drachms of oil of turpentine will be suitable for the purpose. If diarrhoea of a distressing kind should accompany the exhibition of the calomel and opium, the latter is to be discontinued, and blue-pill with Dover's Powder may be given in its stead, the mercurial inunctions and fumigations being still kept up. The aromatic confection and the opiate confection will be beneficial, in small or moderate doses, to check the alvine irritation.*

DR. DENMAN'S TREATMENT.

248. The above is the principal treatment most confided in by influential authorities in this complaint. But Dr. Denman has mentioned his occasional success—and no success, we

* Dr. Blundell speaks of camphor, as an useful combination with calomel in puerperal fever, and as bringing the system more speedily under the mercurial influence. 2 scruples of calomel and one scruple of camphor are to be mixed and divided into twelve doses, which allows five grains of the compound for each dose. We have no experience to bring forward

lament to say, has been uniform in puerperal fever—by a practice somewhat dissimilar, and though there be too much of generalizing and confounding of species in what he has written on the subject of this complaint, still the great experience, ability, and conscientious principles of this eminent practitioner claim from us particular notice of what he has advanced, especially with respect to the treatment of the diarrhœa so frequently attendant on this disorder. He says that he was in the habit of giving either James's Powder, or the following medicine, viz,

R; Antimon. tartarizat gr. ij;

Chel. cancror. p. p. ℥ij, *intimè misceuntur.*

Of either of these, and after the exhibition of a clyster, if thought necessary, he used to give from three to ten grains, repeating it if circumstances required. Sometimes this dose produced vomiting, purging, or profuse perspiration, and Dr. Denman then waited to see the good effect of these operations; but if at the end of two hours the medicine had not thus operated, he repeated it. According to the abatement of the symptoms of the complaint, he judged of the propriety of again administering the remedy, either in the original, or in diminished quantity. He states that great benefit had often been derived from this medicine (which we certainly would be afraid to rely upon), and that its exhibition had been followed by copious fœtid stools mixed with lumps of indurated fœcal matter; that the urine flowed with more ease and in larger quantities; that the skin became bathed in perspiration; and that the lochia increased in quantity, lost its former brown or pale colour, and became sanguineous. Clysters, fomentations, vapour-baths, or

either in behalf of or against this remedy, but are disposed to think favourably of it. However, it is possible that some cases would be far more suitable for it than others.

even the warm-bath, he occasionally conjoined with this remedy, for their auxiliary effects, and often employed the warm flannel sprinkled with spirits as a comfortable application to the abdomen. If pain, however, continued in any part of that region, and were not removed by leeching, to which also as well as bleeding with the lancet he had recourse, he applied a blister directly to the part. He allowed a plentiful supply of drink, but in small quantities frequently repeated. His selection of beverages consisted of chicken-water, or very weak beef-tea, barley-water, thin gruel, milk-and-water whey, and tea of almost any kind. But he was soon obliged to discard his sanguine expectations of universal success from his favourite remedy, and he confesses that "further experience convinced him, that when the inflammatory symptoms are violent, this medicine will often fail to subdue the fever, and that it is sometimes uncertain in its operation." His conclusion was, that no time was to be lost in having recourse to venesection, and that the baneful effects of inflammation were so rapid in their progress, that in a few days they will generally be beyond the control of medicine, "and that if the patient should fortunately recover, her recovery will depend upon circumstances which the physician cannot without great uncertainty and difficulty command." In the less violent forms of this disease, and with more delicate constitutions, Dr. Denman advises the same intentions to be pursued, though with less activity. In such cases, after local bleeding with leeches or otherwise, he approved of "*cleansing*" the stomach by suitable doses of ipecacuanha, or an infusion of camomile-flowers. But he held it indispensable to procure alvine dejections also. For this purpose he recommended the following mild laxative:—

R: Sodæ potassio-tartratis, et mannæ opt. āā ʒij;

Infusi sennæ, et aquæ menth, viridis, āā ʒss;

Tincturæ cardamomi comp. ʒss, M. fiat haustus.

Sometimes he used the antimonial powder (the before mentioned one, we presume) in small doses, or saline draughts with a due proportion of the tartrate of potash or soda, or with rhubarb, or two ounces of Epsom salts well dissolved in a pint of thin gruel, and two table spoonfuls of the mixture administered every hour, until due evacuations were produced. After evacuations, he seems almost invariably to have had recourse to opiates, for the purpose of granting a truce to the system, and gave those opiates in sufficient doses to ensure a tranquilizing effect. Sometimes where the pains were violent at the beginning, after the first bleeding he administered a large dose of tinctura opii, without waiting for any other evacuations, and experienced good effects from it. Indeed, he made it a practice to give opiates wherever the violence of the pain indicated their use. In inferior degrees of the complaint, after one bleeding, either by the lancet or by leeches, he had recourse to an emetic, and gave an opening draught with the intention of procuring four or five stools a-day, and an opiate in the evening, with, he says, the most happy effects. On the necessity of procuring frequent alvine evacuations in this complaint, Dr. Denman seems to have made up his mind, except under some peculiar circumstances, namely, when the stools were very frequent or involuntary. In such cases, he advises clysters of chicken-water, or of flower-and-water boiled to a proper consistency, or a decoction of lin-seed, occasionally adding to them a proper quantity of laudanum. But he cautions against roughness or irritation in the administration of those enemata, owing to the great tenderness of the anus and surrounding parts. The use of very small doses of ipecacuanha (well known to be tranquillizing to the intestinal mucous surface) and mixed with the opiate, in order to give it a diaphoretic tendency, or the compound powder of ipecacuanha in some cooling vehicle, as saline draughts, or with cordials, if

the state of the patient called for them, Dr. Denman also approved of. Or even the administration of the ipecacuanha in sufficient doses to become gently emetic he points out as proper in the event of the bowels becoming much disturbed. Wine he authorised in case of great faintness requiring a cordial, to be given between draughts of the "common emulsion"* with the nitrous spirit of æther. Camphor in stronger preparations than the ordinary camphor-mixture he did not find to answer in this complaint, the stomach not tolerating it. Enemata of strong decoctions of Peruvian bark he tried without success, and found the common domestic enemata, with the addition when requisite of tincture of opium, answer every useful purpose. The internal exhibition of bark was not advantageous in this fever, even where the intermissions were "tolerably distinct;" but in a few cases, in which the intermissions "were complete," it succeeded. In general, however, it tended to increase the disturbance of the bowels; and he found "the common bitter infusion" (that of gentian, we suppose) prepared with cold water, and joined with some aromatic; or a strong infusion of camomile-flowers, with the addition of a few cloves; or the columba-root, either in powder or infusion, and given every fourth or sixth hour; answer his intention much better than the preparations of cinchona then in use. To allay troublesome hiccup, he gave one or other of the following prescriptions, viz. *R: Spirit. ætheris sulphurici, ℥ij; Aquæ puræ, vel Aquæ menthæ viridis, ℥vii; Sacchar. pur. q. s. Fiat mistura, cujus sumat uncias duas, tertia vel quarta quaque horâ;* or occasionally the *Spiritus ætheris sulphurici compositus;* or the *spiritus ætheris nitrosi.* Where he abdomen continued much distended notwithstanding the evacuations, he found blistering it the most efficacious plan.

* Probably Almond emulsion.

The distressing condition of the uterus and vagina prevented him from annoying the patient by trying the effect of injections into the former, for the purpose of correcting the foetid humours; but he considered that detergent and emollient injections might prove useful, were it possible to administer them without causing too much disturbance. In all cases in which he could with propriety do so, he ordered a repetition of mild purgatives, and regarded this as the most advantageous practice, occasionally adding an opiate. This he has sometimes done even where there were highly offensive involuntary stools. He says, "A long and successful practice has convinced me, that the purging, which often attends this disease, is not only salutary, but frequently critical, and, instead of being suppressed, it ought to a certain degree to be encouraged. Nor would it be difficult," he adds, "for me to recollect many cases, in which fatal consequences have speedily followed imprudent attempts to stop the evacuations."

249. Dr. Burns is a strenuous advocate for the promptest depletion, by blood-letting, &c., in all cases of the unequivocal peritoneal inflammation, where the evidence of the pulse, and the symptoms of abdominal tenderness and pain indicated the necessity of it. He admits that "the patient is only to be saved by vigorous means, and by great attention. If the pulse," he says, "continue above 100 in a minute, for twenty-four hours after delivery, there is reason to apprehend that serious mischief is to happen; and unless the frequency depend, decidedly, on debility, produced by hæmorrhage, &c., we ought to open the bowels freely and give a diaphoretic. We must carefully examine the belly, and, if it be full, or painful on pressure, or if the patient be inclined to vomit, we ought instantly to open a vein, and use purgatives. One copious bleeding, on the very invasion of the disease, is more useful than ten afterwards; and the delay of two hours may be the

loss of the patient, whose danger, even under the most active practice, is extreme. I know," he adds, "that there are many unwilling to bleed women in the puerperal state ; and the condition of the pulse may seem, to young practitioners, to forbid it. But, in cases of peritoneal inflammation, I must strongly urge the necessity of blood-letting at a very early period, and the evacuation is to be repeated or not, according to its effects, and the constitution of the patient. If she have borne it ill, and not been relieved when it was used first, I apprehend the case has not been simple peritoneal inflammation, but malignant puerperal fever. If she bear it well, and the pulse become slower and fuller, and the pain abate, we are encouraged to repeat it.—When I say this, however, I do not mean to urge the senseless and extravagant use of the lancet. A prudent practitioner will bleed early and freely, so long as he is, thereby, abating inflammation ; but he will stop in time, and observe whether he be, really, gaining advantage by the evacuation, or, on the contrary, sinking the patient, and destroying that vigour which is necessary for an effort to recover. He will never bleed late in the disease, unless it be to subdue an exacerbation, and when the effect of former depletion leads him to hope for renewed benefit." It would almost appear from the extract just made, that Dr. Burns thinks it best to bleed by way of experiment in the commencement of puerperal fever ; however, if he do this by way of being at the safe side, the discriminating marks, so amply enumerated in the preceding parts of this chapter, will, we hope, enable the reader to form a correct judgment with regard to the case that really calls for the free use of the lancet. After general bleeding, should the pain continue, Dr. Burns advises local bleeding at the pained region, either by scarification, or the application of leeches thereto ; and subsequently covering the abdomen with a warm

poultice. He recommends three grains of opium to be given after the first bleeding, to be repeated according to circumstances; and the bowels to be, at the very first, opened freely with calomel, or some other purgative 'given in a large dose, for he says that ordinary doses do no good. In the after stages of the complaint, subsequent to effusion having taken place, he countenances purges, alone, more than blood-letting. Sinapisms and blisters, he says, are chiefly useful when the pain is circumscribed. He never found digitalis useful in this complaint. In a modification of this affection, where the pain seems to arise more from high sensibility of the nerves than from actual inflammation of the parts, and often shoots in the direction of some particular abdominal nerve, for instance, the ilio-pubal, there is at first either circumscribed pain, or wandering pain like gripes. The pulse, then is frequent, but not sharp; the skin hot; the abdomen swelled, and the pain felt, chiefly, on pressure, or in turning or on breathing deeply. Here, the lochial discharge usually continues. This modified disease, according to Dr. Burns, generally comes on about the second or third day, and, if not checked, the pain increases greatly, the abdomen swells and becomes tense, and the patient dies with the symptoms of peritonitis. There is seldom shivering and coldness in this form of the puerperal fever, the pulse is soft, and the pain is soon more acute than usually happens in peritonitis. Venesection, though it may at first give some relief, is not found to do so permanently, and should not be repeated in this species. Dr. Burns in this case recommends the exhibition of an opiate, either by the mouth or in the form of an enema, and the application of a large linseed-meal poultice to the abdomen; a mild laxative, or a saline clyster he then advises to be given, and leeches to be applied to the part affected should the pain continue. But we imagine

the reader will recur to what has been said in the first part of the present chapter, with reference to the treatment of such modifications.

250. With regard to the malignant form of puerperal fever, Dr. Burns gives a very long detail of its symptoms, but it is not necessary that we should take up the time of the reader by going into this detail, after what has been already said ; Dr. B. notices, however, the very general debility of the muscular fibres, and the prevalence of aphthæ, which appear in the throat, and extend over all the mouth, and down the œsophagus. To the probable extension of those aphthæ to the stomach and other parts of the intestinal canal, he seems, and with great reason, to attribute the very great irritability which so often prevails in those parts. As to venesection in this malignant species, he thinks the advantage from it very dubious, and certainly only derivable in the very early stage, if at all. After the malady has made progress, Dr. Burns never found bleeding useful. It should not, if employed at all, be repeated, therefore, unless very decided benefit had been derived from the first trial of the lancet. The application of numerous leeches to the abdomen, followed by that of the warm poultice, Dr. B. considers safer and more successful than venesection. Immediately after the leeching, he directs the administration of some smart purgative medicine, such as salts and senna, calomel succeeded by sulphate of magnesia, or castor oil. The operation of the purgative to be followed by an opiate. He is not an advocate for permitting diarrhœa to continue long, unless it evidently give relief, and the fæces be fœtid. In this last case, he says, calomel and diluents ought to be employed. The rule of practice he seems to lay down with regard to the use of purgatives in this complaint is, to use brisk medicines of this class, and clysters where there is no diarrhœa ; milder doses, alternated with opiate enemata, where there is. Vomiting he restrains by solid

opium, and by an opium-plaster applied to the region of the stomach, and sometimes by saline draughts. Nausea he does not think calls for decided artificial vomiting. He approves more of anodyne, or rubefacient embrocations, or the application of a warm poultice, when the weight can be borne, than of the use of blisters, for the abatement of pain in the abdomen, fearing injurious irritation from the latter. The turpentine epithem (i. e. the application of hot flannels wetted with oil of turpentine) he deems at least as effectual as blisters in relieving the internal pain, and far less likely to induce constitutional irritation than blistering. He sets no value on mercury—here we cannot agree with him.

251. It would, perhaps, be more confusing than useful to our readers were we to notice the great variety of treatment advised by practitioners in this very critical malady. Each, probably, has adopted views according with the species of the disease which he was most in the habit of meeting with. But we turn with much satisfaction to the highly interesting remarks of Dr. R. Collins, late Master of the Dublin Lying-in Hospital, in his very able "*Practical Treatise on Midwifery*," to which we have more than once adverted, and which brings before the profession demonstrative proof that no treatment has been more generally beneficial in puerperal fever than that adopted in the admirable Obstetric Institution which is such an ornament, such an honour, and such an advantage, to the metropolis of Ireland. Dr. Collins notices the very apparent connection of the malignant puerperal fever with the prevalence of either typhus or erysipelas. When these complaints occur extensively, we may expect the malignant puerperal fever to become epidemic; and indeed Dr. Burns has intimated as much. It is, however, in hospital practice that puerperal fever of the malignant species is most to be looked for; in private practice the decided and far more tractable peritonitis is what the obstetri-

cian is most likely to have to deal with. More especially in Dublin, the low typhoid symptoms, so prevalent in hospitals, are seldom, says Dr. Collins, to be met with among the higher classes of society, nor indeed are they to be found to any extent even among the humbler grades, out of hospitals. The malignant species has very unequivocally been introduced by persons labouring under typhus fever, into the Lying-in Hospital, several patients, immediately after the admission of such persons, having been suddenly attacked with the malignant puerperal fever, in a very remarkable manner. But it is only fair to observe, that instances to the reverse have been noticed, as several individuals, while labouring under the effects of typhus fever, have had very favourable and speedy parturition, and without any contagious consequences being witnessed from their admission among the inmates of the institution. In the way of preventing this epidemic, and banishing it when it did prevail, the most decided advantages were experienced from purifying the wards with chlorine gas, washing the wood with chloride of lime, white-washing the walls, together with painting; and washing, and stoving the bed-clothes. These measures, together with an uniform attention to free ventilation, appeared to exercise an almost magical control over the epidemic. During the seven years in which Dr. Collins was Master of the Dublin Lying-in Hospital, commencing in 1826, 88 cases of puerperal fever occurred in it. Of these 32 recovered, and 56 died. In 15 cases only, bleeding was considered advisable, and, of the 15 so treated, 7 recovered. Where the symptoms were those of peritonitis, the lancet was freely used in the beginning; but in all cases where this was not authorised by the state of the pulse, &c., leeching the abdomen, whenever pain and tenderness on pressure were perceptible, was adopted in preference to the lancet. Wherever an attack of this complaint was threatened, a draught of half-an-ounce of castor oil

and an equal quantity of oil of turpentine was employed for the purpose of evacuating the bowels, and, when the alvine dejections had previously been insufficiently obtained, frequently the purgative was made to consist of a double quantity of the above ingredients. The number of leeches applied to the abdomen, in the first instance, was usually three dozen, though sometimes more, and this local depletion was immediately followed by a warm bath, which was brought to the bedside, and in which the patient continued so long as her strength would permit; after quitting the bath, she was carefully wiped dry, and the bed was well warmed before she was received into it. A course of fomentations of the abdomen was then commenced, by means of flannels wrung as dry as possible out of boiling water, and changed every four or five minutes. This stuping was continued for at least an hour; and where the strength of the patient was not equal to sustain the warm bath, the stuping was sometimes substituted for it, the stupes being applied over the entire abdominal surface. When the operation of stuping was ended, a warm flannel was spread over the abdomen. The next object was, invariably, to get the patient as promptly as possible under the influence of mercury. This was accomplished by the exhibition of four grains of calomel and an equal quantity of the powder of ipecacuanha, every two or three hours, aided in frequent instances, by friction of strong mercurial ointment to the inside of the thighs and legs. The powder of ipecacuanha was considered a better adjunct to the calomel than opium, and to determine more to the skin, as well as to excite less uneasiness. Where, however, the stomach would not tolerate the ipecacuanha, the calomel, in the proportion of five grains was occasionally combined with a quarter of a grain of opium, and at times with a grain of the latter, and given in the form of pills, in place of the powders before-mentioned. The quantity of calomel and ipecacuanha thus exhi-

bited sometimes amounted to 3, 4, or even 5 hundred grains ! And still, even with this formidable quantity, together with the auxiliary mercurial inunction, cases were occasionally met with in which the system could not be got under the mercurial influence ! To this treatment was added a repetition of leeching, warm bathing, and stuping the abdomen, while there continued any pain or tenderness in that part. Thus it was not uncommon for the entire amount of the leeches so applied at various times to be so much as 10, 12, 14, or 16 dozen. No benefit, but sometimes much disadvantage, was experienced from giving the calomel in larger doses than those above mentioned. Opium was not found to be beneficial unless in combination with the calomel ; but it does not appear to have been extensively tried by itself. The general bleeding Dr. Collins considers inadmissible except where the pulse was strong and full, and the symptoms were of a highly inflammatory character ; but, with or without venesection, the leeching appeared to be invariably employed. When the bowels were very much affected, a pill of equal quantities of blue-pill and Dover's Powder was given every second hour, with good effect. Castor oil and oil of turpentine were occasionally repeated whenever the bowels appeared to require evacuation, and the use of the powders of ipecacuanha and calomel was resumed after the operation of the purgative. Whey was the ordinary drink, but chicken-broth was occasionally substituted for it. In one successful case, in which the pulse was 120, strong and full, and the abdomen full and exceedingly painful and tender on pressure ; where, in short, the symptoms of peritonitis were well marked ; the patient took 184 grains of calomel, 124 of ipecacuanha, 3 grains of opium, besides castor oil and oil of turpentine in considerable quantities. She lost 15 ounces of blood from the arm ; had 16 dozen of leeches applied to the abdomen at various times, and its entire surface blistered, she had five warm

baths; and the inside of her legs and thighs was frequently rubbed with strong mercurial ointment for three days. It was not often, however, that the treatment had to be pushed to such an extent as in this case. Shortly after the mouth became affected, the abdomen, submitted, as it was, to such repeated leeching, bathing, stuping, &c., lost its painfulness and tenderness, and all the dangerous symptoms rapidly abated.

252. Dr. Collins considered that the accession of inflammation to the ovaries in this complaint frequently produced sterility. At times the thoracic symptoms had to be particularly attended to. The patients required to be seen at least every six hours, and very attentively watched. On the whole, this treatment appeared quite as satisfactory as any that could be adopted; though Dr. Collins freely acknowledges, that the complaint, in its aggravated form, proves fatal to *a considerable majority* of those attacked,—“under every mode of treatment as yet recommended.” It sometimes comes on insidiously, and without any rigor. Occasionally its accession is immediately after delivery, and it sometimes even appears to have been making progress before parturition; but generally the puerperal fever is more slow in its approaches. Out of the 88 cases that occurred in the Lying-in-Hospital during Dr. Collins’ Mastership, *one* had the disease well marked before delivery; *one* was attacked in six hours; *one* in 9 hours; *one* in 10; *three* in 12; *one* in 13; *one* in 15; *two* in 17; *one* in 18; *one* in 20; *one* in 21; and *two* in 30 hours after delivery; *thirty-two* were attacked on the first day; *twenty-nine* on the second; *eight* on the third; *two* on the fourth; and *one* on the eighth day. It did not appear, however, that several previous or severe labours were necessary to induce the malady; for the greater proportion of the women attacked were in their first confinement, and several of them had remarkably short labours.

253. Thus, we have endeavoured to furnish the practitioner with as much information respecting this fearful disease as we consider practically useful. Perhaps we have done so at the expense of being somewhat tedious; but the importance of the subject was such as to forbid our omitting any thing concerning it that came from influential authority.

CHAPTER XVII.

THE CÆSAREAN OPERATION.

254. There are three operations known by the name of Cæsarean: first, the vaginal Cæsarean operation, where, through morbid rigidity of the os and cervix uteri, sometimes occasioned by a schirrous hardness, delivery becomes impracticable without making an artificial incision by which the child can pass; second, the regular Cæsarean operation, in which both the abdominal parietes and the uterus are incised, and the child manually extracted; and, thirdly, the operation to which we have adverted when speaking of the rupture of the uterus, where the abdominal parietes are cut for the purpose of removing the fœtus which had escaped from the womb into the cavity of the peritonæum, or where the same operation is performed in consequence of extra uterine pregnancy. It is, however, to the second of these operations the term Cæsarean is most generally applied.

255. This operation is far from unpopular on some parts of the European continent; and, probably from this cause, and

from the continental Obstetricians, consequently, having recourse to it with far greater readiness than those of the British Isles, the former can produce a much more extensive list of successful cases attendant upon it, than we can boast of. In the annals of English operative midwifery, it is to be doubted whether more than one instance of the mother's recovery after the regular Cæsarean operation can be referred to, though in a few instances the children have been extracted alive by it. Hence, the British practitioner has so strong an objection to performing the operation, that he will generally let his patient run to the last extremity, and try all other means, before he can feel himself justified in having recourse to an operation so opposed to the current of national opinion. If, therefore, as has been often surmised, a continental obstetrician will occasionally extract a child from the uterus by incision when the necessity of the case does not imperatively demand his doing so; and if, on the other hand, it may be suspected that a British practitioner not unfrequently permits his patient to sink into such a state of fatal exhaustion (before he can bring himself to submit her to an ordeal regarded as so desperate), that her recovery, with or without the operation, would be problematical in the extreme, we are not to be surprised at the different result of a proceeding adopted under such very different circumstances. There surely must be some vital energy to enable a patient to survive a surgical operation of any considerable extent—some sanative powers to carry on the process of restoration and reunion of tissues; and if the system be worn down by long protracted sufferings, and the parts in contact with the uterus, and closely allied to it in sympathy and vascular as well as nervous endowment, be previously subjected to irritation, if not to structural injury, we should not be astonished if the issue be a fatal one when a severe operation is superadded. Now, as the cases which are proper for, or really

require the Cæsarean operation, are not difficult to be decided upon, generally speaking, it is the duty of the practitioner to make up his mind on the point before his patient has been brought to death's threshold by suffering and exhaustion. It is, however, laid down as a maxim, and generally so received among British Obstetricians, that the Cæsarean section is not to be thought of except in cases where the pelvis is so contracted by deformity as not to admit of delivery by any other method, even with destruction of the child. This now appears to be the law of the profession in these countries. But cases of this kind do occasionally occur, where the pelvis is, as it were, blocked up by deformity; and where, even after a revolting course of mutilation of the offspring, and of violence scarcely less injurious to the mother herself than the Cæsarean operation would be from the bruises to which she is subjected by instruments and manual pressure, the parts are found incapable of admitting the extraction of the foetal remains *per vias naturales*. This can be tolerably well ascertained, by a person of any experience, from a careful examination *per vaginam*, even without the aid of measuring instruments.* It is unfortunate, indeed, that by an early vaginal examination we cannot reach the promontory of the sacrum; but though we cannot pass the finger so high as that projection, as has been elsewhere observed, yet we can judge pretty clearly by the general formation of the upper part of the vaginal canal; and the incapability of reaching the presenting part of the foetus will usually bring the question to a decision. The foetus remaining immovable is just cause of alarm. When the projection of the promontory of the sacrum, and its proximation to the arch of the pubis is so great as to prevent the fingers of the examiner from reaching

Which by the generality of practical men are considered to be of little utility.

the uterus, the case is an unpromising one for either natural or instrumental delivery. Dr. Burns says, "I must hold to the position formerly laid down, that the crotchet cannot be used, when the child is of a full size, unless we have a passage through the pelvis, and its linings, measuring fully an inch and three quarters, in the short diameter, and three inches in length; or, if the child be premature and soft, an inch and a half broad, and two inches and three quarters long." It is a question, also, whether a complete adhesion of the vagina, where its cavity is obliterated from previous ulceration, &c., may not render the Cæsarean operation preferable, during parturition, to the very formidable one of cutting a passage through the vagina for the child, and thus endangering both the bladder and the rectum; for even at any time the latter operation [260] is an intricate if not dangerous one, but certainly scarcely to be thought of during labour.

256. When, however, the regular Cæsarean operation is to be performed, the chief operator will need the assistance of one or more persons of intelligence; for ligatures on arteries may be required; the protruding intestines are to be replaced and confined; and securing the edges of the wound in due apposition is a task which *one* person will have some difficulty in executing without very superior skill and dexterity. Ligatures ought to be at hand, for the purpose of tying any arteries of importance that may be cut through; though it may happen that there will be no hæmorrhage during the operation sufficient to render the application of a ligature or even torsion, requisite; needles, &c., for sutures, should be provided; for while some persons consider proper apposition, with bandaging and strips of adhesive plaster, adequate to ensure union of the wound, other and indeed most surgeons imagine a few stitches of the interrupted suture indispensable, and a tendency, which there certainly in general is, in the lips of the wound to gape

would point out the propriety of those stitches. Two bistouries are necessary, one with a probe or blunt point, and the other with a convex edge. Sponges, basins of cold water (perhaps some water acidulated with a little vinegar), long strips of adhesive plaster, lint, long and square compresses, and a large bandage to be applied round the body, as a security for the dressings, &c., a scapulary, &c., should be got ready.

THE OPERATION.

257. Various places have been recommended for the incision into the uterus ; some operators prefer cutting along the inner margin of the rectus muscle, with the object of thereby avoiding the epigastric artery ; while others select the *linea alba* (and indeed, this part seems the most favourable in general for the operation). Into the *linea alba* the incision is made perpendicularly, and we think it presents several advantages. There are practitioners, however, who consider it better to make the wound somewhat transversely, in order to correspond with the fibres of the *Transversalis* or the *External-oblique* muscles. By the latter method, say its advocates, you ensure a readier apposition of the lips of the wound. But the weightiest objection to making the incision at the side of the uterus appears to be the increased vascularity of the part, and the greater risk of hæmorrhage from the large size of its vessels. But though we consider the *linea alba* commonly the preferable part for the incision, circumstances may induce the operator to select another situation for it. The appearance and projection of the abdomen, and the position of the uterus, may influence the practitioner to select one point for his incision rather than another. It should be ascertained as well as possible by inspection where the intestines are least likely to protrude, which the position of the uterus and an examination with the hand

through the abdominal parietes will help to point out; and *there* is the most advisable part for the incision. It is, however, never to be forgotten that the bladder must be *perfectly emptied* before we attempt the operation, as it is well known, that, when distended with urine, it mounts high into the uterine region, and even if it should not be wounded, it would present a most inconvenient obstacle in the subsequent stages of the operation. The water, therefore, ought to be entirely drawn off with a catheter. This being accomplished (indeed the rectum ought also to have been freed, were it only with a view to obviate inflammation.), an assistant must steady the uterus in a position the most suitable for the operator. He will make a lateral pressure on it, and also from above downwards, so as in some degree to circumscribe the swelling of the womb, and prevent the protrusion of the bowels. The incision, which is made with the convex-edged bistoury, will require to be about six inches in length. It is to be cut through the integuments and abdominal muscles, with great care and caution, until the shining exterior peritonæum make its appearance. In the latter, a small incision is to be made with the greatest possible precaution, just sufficient to enable us to introduce a curved or probe-pointed bistoury, which ought to have so much of the blade wrapt round with lint as to leave not more than an inch of the edge uncovered. The index finger is to be placed along the back of the bistoury to serve as a guide, and to give warning of any substance that may come in contact with it. In this manner, the incision in the peritonæum is to be made to correspond in size with that in the integuments, &c., and the external surface of the uterus will thereby be exposed. An incision is then to be made in the uterus, in a similar manner, and with like precaution as that made in the peritonæum. It would be desirable not to make that incision in the exact situation of the placenta, if possible,

but this is a point not always to be ascertained until we have incised down to the uterus, and then it is too late to alter the direction, for the incision in the uterus must exactly correspond with that in the external parts. If, however, the placenta should be in the way of the incision, it must not be cut through, but detached, and the membranes ruptured at the margin. The lips of the wound are to be gently kept asunder, while one assistant carefully extracts the child, and another keeps the intestines from protruding. The placenta and membranes are then to be completely but cautiously brought away; and the uterus will be found to contract rapidly, so as in general to prevent much hæmorrhage taking place. The uterine bleeding has, however, been sometimes, but not usually, very formidable. The lips of the abdominal wound are now to be cleansed and brought together, clots, of course, being removed. Where sutures are used, they must not be passed through the peritonæum but merely through the integuments and muscular substance. After the sutures, (three or four in number) have been inserted, the strips of adhesive plaster are to be applied between them. Next, the soft compresses should be laid outside the lips of the wound, and the broad bandage be brought round the entire of the dressings. An anodyne is next to be given to the patient, who is to be left to repose. The subsequent treatment [of the wound is to be according to the strict rules of surgery. Some surgeons employ the quilled suture, as an additional security against the wound gaping. The patient must be attentively looked after, and all necessary measures adopted to obviate the occurrence of inflammation. Should tenderness or pain of the abdomen indicate it, means analogous to those described in the last chapter, viz., leeching and stuping the abdomen, together with the exhibition of calomel, &c., may be indispensable.

258. Dr. Denman, in his work, quotes, as it were as a spe-

cimen, a description of this operation, as performed by Mr. Thomson at the London Hospital. In this case, the patient was placed on an operation table, lying on her back, her head supported by pillows, and her legs hanging down. But it is more customary to bring her to the edge of the bed. The uterus, in this case, was more prominent on the right side than the left, extending about two or three finger's-breadth on the left of the linea alba. Accordingly, the incision was commenced about a hand's breadth on the right side of the umbilicus, and nearly opposite thereto. From this it was carried down, longitudinally, to the length of about six inches, cutting through the skin and adipose substance, and the outer edge of the Rectus muscle. The tendinous expansion of the abdominal muscles and the peritonæum were then carefully divided with a curved bistoury, in the manner we have mentioned, and the uterus was next incised, and the wound dilated as directed above. But the operator does not appear to have used a probe-pointed bistoury, the placenta adhered to the very part where the opening into the uterus was made, but easily gave way, receding as the guard-finger advanced in making the opening. The placenta and membranes readily protruded. The sides of the uterine incision were kept asunder, and the child was brought out by the feet. There was no difficulty experienced in extracting either the fœtus, the membranes, or the placenta, and the child "cried stoutly in a few minutes" after being delivered. The uterus contracted "amazingly fast;" the bowels and omentum showed a disposition to protrude, but were easily returned; and, after the grumous blood was wiped away, four sutures were inserted, the intermediate strips of adhesive plaster were appropriately placed, "and rolled up in the form of bolsters, or compresses, after the manner of the quilled suture, and the wound was thereby brought into and retained in close contact: and lint, a common pledget being applied, finished the opera-

tion.” There is an excellent and most explanatory article on the Cæsarean operation in *Cooper’s Surgical Dictionary*, which every practitioner should consult.

259. It is sometimes necessary, as we have remarked above, to deliver by means of an incision or incisions made in the superior part of the vagina, owing to the uterine orifice being rendered impervious by morbid alteration of structure, and the cervix, itself becoming unyielding. The operation by which this is accomplished is termed the “Vaginal Cæsarean operation.” Schirrous hardness of the neck of the uterus, therefore, sometimes with great obliquity of the os uteri combined, and at times, also, connected with small dimensions of the pelvis, compels the accoucheur to have recourse to this operation. When the obliquity of the uterus is so considerable that the os cannot be discovered, the portion of the womb which projects into the vagina must be opened. The operation is performed with a probe-pointed bistoury, wound round with lint to within an inch of its point, as before described. It is introduced under the guidance of the index-finger in the manner mentioned in the other operation, into the opening in the uterus, whether natural or artificially made. The aperture is to be sufficiently enlarged to answer the purpose, and sometimes in various directions. Caution is required in introducing the knife. After the cervix has been divided, the expulsion of the child will either be left to the natural efforts of the uterus, or manual aid will be given, according to circumstances. In some cases of the child escaping from a ruptured uterus, the “vaginal” operation may suffice for delivery. In general dressings are not indispensable in this operation, but if a troublesome hæmorrhage should take place, it is customary to apply to the incision a dossil of lint wetted with either vinegar or spirits of wine; but there must be attention paid subsequently, lest adhesion should form between the cervix uteri and the superior

part of the vagina. The os uteri has been of so rigid a substance, and so like to cartilage, that by no possibility could delivery be accomplished without this operation. In such cases the alteration of structure often seemed to render the incised substance nearly if not completely insensible. Fortunately, however, such operations are but seldom necessary. As to the mere abdominal, or "spurious" Cæsarean section, it does not require to be described after what we have said respecting the more intricate, or utero-abdominal operation.

CHAPTER XVIII.

OCCLUSION OF THE VAGINA AND UTERUS.

260. This afflicting condition is not often met in a complete state, but in an incomplete one it has not unfrequently been observed. We are indebted to an essay on this subject, read by Dr. Evory Kennedy before the Dublin Obstetrical society, for the best description of the disease and of the method of operating for it that we have as yet seen. Dr. Kennedy considers the subject under the heads of partial and complete occlusion of the vagina; occlusion of the uterus; occlusion complicated with opening into the bladder and rectum.

261. Partial occlusion of the vagina may occupy more or less of the circumference of the vaginal canal, and is the consequence of inflammation, which, through neglect, has been suffered to cause adhesion of the lining membrane, or to produce a new structure in the form of transverse bands. Thus,

either the vaginal passage may be narrowed throughout its entire length, or interrupted in particular places. This may interfere with the act of coition; but it unquestionably must be more or less detrimental in parturition. Dr. Kennedy speaks of a preparation in his museum, in which a falciform band spread round the lateral and posterior part of the vagina. This occasioned so formidable an obstacle to labour, that the uterus became suddenly lacerated, and a triangular flap of the os and the cervix uteri was forced down into the vagina. In another case, witnessed by Dr. Labatt and Dr. J. Labatt, two nearly similar bands extended across the vagina, and caused the entire of the recto-vaginal septum to give way, with the exception of the sphincter ani. This species of interruption, by adhesive bands, Dr. Kennedy regards as the more frequent form. But sometimes the diameter of the vaginal canal is so narrowed that even an ordinary-sized catheter could not be introduced through it without difficulty and pain. In such narrowing of the canal throughout its course, the case does not appear to be by any means so obstructive to delivery as where transverse bands exist. Dr. Kennedy makes mention of a case in which there was a general narrowing of the vaginal diameter, so as to occasion great suffering *in coitu*; the first stage of labour in this case was very tedious (48 hours), the finger could not be introduced without great difficulty, nevertheless, the vagina dilated from the uterine efforts alone, and the child was expelled without artificial assistance. However, the administration of the ergot of rye was considered advisable and had recourse to in this case.

262. From all that we can learn on the subject, we have been led to infer the urgent necessity of immediately dividing, or at least slightly incising, those transverse bands, before the foetal head can approach them; while we consider that the

general narrowing of the vagina may most commonly be confided with incalculably more propriety to the natural process.

263. Where the occlusion of the vagina is complete, we shall necessarily have ample warning of the circumstance, unless it have occurred after pregnancy. For the menstrual discharge would be interrupted, and coition be impracticable. Sometimes, indeed, immediately above and below the adhesion of the lining membrane of the vagina, there will be a certain portion unadherent. Dr. Kennedy describes a case of this kind, where inflammation, consequent on a difficult labour, set in, and the os uteri "was perfectly locked up." Such inflammations will usually be the effect of severe delivery by instruments, where the introduction of some cylindrical body into the vagina, to obviate the adhesion of the parts, has been neglected after parturition. In all cases of instrumental delivery, the subsequent state of the vagina ought to be looked after, and the introduction and retention of some body capable of preventing such a calamity as obliteration of the canal would be a wise precaution. There could be no harm whatever in suffering it to remain until the vaginal surface were restored to a sound state; which the omission of it may be a very great evil. A tallow or wax candle, rounded at the point, and immersed in tepid water for a moment before its introduction, was found by Dr. Kennedy to answer very well for the purpose of obviating occlusion. Where bands or such like productions form, they ought to be divided early during the labour with a bistoury, and the cylindrical body be retained until all danger of contraction shall have passed over.

264. But where occlusion has been allowed to take place, the conducting of an operation for the removal of it is very critical. In general, the obstruction which it presents to the passage of the menstrual fluid causes great uneasiness, and, where that fluid had accumulated in quantities above the point of obstruc-

tion, severe constitutional symptoms have been known to set in, such as "lumbar and pelvic pains, abdominal spasms, nausea, vomiting, &c." But, strange to say, where this obstruction to the exit of the menstrual secretion existed, the uterus sometimes appeared to refrain from this secretion altogether suspending it until the obstruction were removed, and then recommencing it! Hence, there may be complete occulsion without much accumulation of the menstrual fluid above the obstruction. There are, in our opinion, few operations more critical, or demanding stricter precautions on the part of the surgeon, than that for occlusion of the vagina. We shall copy Dr. Evory Kennedy's directions for it, inasmuch as they are highly unexceptionable; and, besides, few writers on midwifery seem to have paid much attention to this point. Dr. Kennedy properly cautions the operator with regard to the accidents he is to guard against, viz., the wounding of either the bladder or the rectum:—"The thinness of the texture to be divided, the danger of wounding the bladder on the one side, and the rectum upon the other, or the getting into the peritonæal cavity, above, the depth of the parts in which the operation is to be performed, and confined space afforded to the operator, render it as difficult and as hazardous as any operation that can by possibility be undertaken."

THE OPERATION FOR OCCULSION.

26. "When the operation has been determined upon I would advise the operator to be provided with several spatulæ of different breadth and thickness, either of wood or ivory, as well as knives of different forms, at least two well rounded scalpels with handles seven or eight inches long, a double-edged scalpel, a blunt-pointed bistoury, muffled to within an inch of its point, two or three brass tractors to separate the vulva, and

a sponge fastened to a stick about seven inches long. The patient is now to be placed in the usual position for lithotomy on the edge of a bed or table; the bladder and rectum having been emptied, the forefinger of the left hand is to be introduced into the rectum, and a careful dissection made from side to side, in the line of the vagina, through the coherent walling; the finger in the rectum indicating the correctness of the line in which we cut; and if doubt exist in our minds, as to the course we should pursue, always directing the knife more to the rectum than to the bladder, as a wound in the former is productive of less inconvenience than in the latter. Having cut in this manner as far as is safe, carefully withdrawing the knife, and inserting one finger to ascertain the situation between each incision, when the incision becomes deeper, we introduce a narrow spatula and cut carefully upon it, with the knife parallel to the blade, widening from side to side as we proceed. Much may also be done by separating the cellular tissue connecting the walls, by the finger or spatula as a dilator, gaining a central separation, and afterwards cutting it larger from side to side with the scalpel. Where the textures are too dense for this, then the double-edged scalpel may be used for the same purpose, and the sides enlarged with an ordinary scalpel or bistoury, we shall find the latter instrument particularly useful where bands of the cellular tissue, more resisting in their nature, remain laterally, and which ought to be carefully divided by it. By persisting in this manner cautiously and carefully dissecting the structures, we at length get up above; if menstruous fluid be accumulated above, we are satisfied with the operation being completed by its escape, which in its dark and grumous character contrasts with the blood escaping from the vessels; where this is not the case, we must carefully pass a round or metallic catheter into the os uteri, if this be pervious, and if not we must either proceed

to render it so, or await for some days the further dilation of the vagina, before taking this step." Dr. Kennedy disapproves of the introduction of a trochar, as has by some surgeons been recommended in cases of vaginal adhesion. And indeed no rational person can have attended to the steps of the intricate process described above, or have duly considered the nature of the malady in question, without perceiving the utter inadequacy of a trochar for removing adhesion so extensive: not to speak of the danger of the instrument penetrating into the neighbouring cavities.

266. In the after treatment, as detailed in cases recorded in the valuable pamphlet from which we have extracted the foregoing directions for the operation, a powder consisting of half a grain of calomel with two grains of prepared chalk, appears to have been administered every third hour with beneficial effect; a catheter was passed into the os uteri; nine of the powders were given, until the gums were slightly affected, in one case which terminated favourably: the patient (probably at the vagina) was syringed with tepid water twice a day, and purged with castor oil; a number-six candle was passed into the vagina on the 23d inst., (the operation having taken place on the 8th,) and the catheter was occasionally passed into the os uteri; after some time a tent was introduced into that orifice. The calomel was employed as a precautionary measure against peritoneal inflammation. Sometimes, a smaller candle had to be introduced in the first instance, but the size was gradually increased until a sufficient dilatation of the vagina was ensured. Great attention to cleanliness was observed. Occasionally, in complex cases showing a tendency to peritonitis, leeches to the abdomen, together with mercury, &c., were had recourse to. Those persons who wish for the details of the cases furnished by Dr. Kennedy must consult the instructive pamphlet from

which we have obtained the above important practical information.

HYPERTROPHY OF THE OS UTERI.

267. We have slightly touched upon this subject in a former chapter, alluding to the occasional prolongation of the os uteri; but another interesting tract, by Dr. Kennedy, has directed our attention more fully to the subject, and shewn us that it may be of considerable importance in midwifery. Mistaking hypertrophy of the os uteri for polypus, and operating under this impression, Dr. Kennedy suspects to have been both of frequent and seriously detrimental occurrence. Hypertrophy of the os uteri is often accompanied with prolapsus, which, indeed, it has a tendency to produce. But it is not necessarily attended by any change of structure in the tissue, and, though occasionally more or less tender to the touch, and of a congestive or slightly inflammatory aspect, it yields to a simple mode of treatment, as shall presently be noticed. Dr. Kennedy has given a plate containing a representation of drawings of the usual deformities of the os uteri in this complaint. Sometimes both the lips of the os have been prolonged, so as to resemble the open beak of a bird. At other times, and most frequently, one of the labia, and that usually the anterior, is the subject of hypertrophy. An instance of this is adduced in the work alluded to, of a "tripartite hypertrophied os." In another case the os uteri grew to a considerable size, and, without any remarkable development of labia, projected into the vagina to the extent of an inch and a half, and being of a deep red colour, as well as painful to the touch. One case is referred to by Dr. Kennedy, as "peculiarly interesting," proving by its structure, "the tissue that takes on the hypertrophy to be the

fibro-cellular tissue of the uterus, and not the mucous membrane; the latter membrane being merely continued over it in the general development of the hypertrophied structure." It is further interesting in furnishing us with a power of concluding that the disease is one quite distinct in its character and seat from that of polypus, the disease of all others best inspected by means of a speculum vagina. The successful treatment adopted was, "repeated leeching of the hypertrophied part, and alteratives." Sometimes, "the inner surface of the tumour, which was slightly granular, was touched with nitrate of silver lotion." Where the enlargement was in the anterior lip, the functions of the bladder were sometimes found to be disturbed; when the posterior was the hypertrophied part, the rectum showed symptoms of irritation. Where the os was generally enlarged and projecting into the vagina, much inconvenience was experienced from it *in coitu*. It has been remarked that this hypertrophied condition had a tendency to promote prolapsus uteri in some degree. A slight bearing-down sensation, or that of weight, has proceeded from it. It, therefore, requires the recumbent posture to be maintained during the time it is under treatment by leeching and alteratives." There is occasionally a throbbing and fulness perceptible in it, as well as a sense of weight, and this is more remarkable "about the setting in of the periodic discharge, indicating a congestive state of the part." Dr. Kennedy imagines that the disorder has in consequence been taken for dysmenorrhœa in some cases. In using the pessary for the treatment of this complaint, much precaution is necessary or considerable irritation may be induced. Where one is employed it must be of the *ring* kind. In labour, where the pendulous lip protrudes between the pubis and the head of the child, it greatly interrupts the uterine action, often making parturition tedious and difficult, and evidently restraining the

uterine function. "The practice to adopt in these cases, is to press the protruding lip very gently upwards, and retain it there with the fingers during two or three pains; this is very easily accomplished, the tumour in general remaining and the head appearing to be pressed down beyond it. If, on the contrary, it show a disposition to descend, then the finger may be retained for some time longer within the vagina, in order to keep the part up; or, if this fail, a small piece of soft sponge may be passed up, so as to rest at the upper part of the space through which the lip protrudes, and prevent its relapse."

PUERPERAL MANIA.

268. Mental aberration, though happily not of frequent occurrence as an accompaniment to parturition, is nevertheless occasionally met with. Sometimes it attacks during pregnancy, and its early stages; at other times, when the term of utero-gestation is drawing to a close; occasionally during the progress of parturition; but more frequently at some indefinite period after delivery. The disorder appears to be attributable to that increased irritability of the nervous system which the state of pregnancy and its consequences have such a tendency to create. But not unfrequently an inflammatory condition of the mammæ would appear to be considerably implicated in the production of this disease. Dr. Denman thinks that puerperal mania happens without any connection with disposition or habits, acquired or hereditary: but it is not unlikely, though this may be often the case, still that such habits or disposition, if previously recognisable, would greatly predispose the individual to an attack of mania under the irritation of the puerperal state. Distress of mind pre-existing is usually considered a predisposing cause of the complaint in question, or any alarm occurring at the time may be a proximate cause. Pa-

tients who have suffered from intermitting fevers have been considered predisposed to such attacks. The puerperal mania has, however, by some writers been regarded as so much dependent on a disordered condition of the lacteal secretion, as to obtain from them the name of mania lactea. The symptoms of this disorder do not differ much from the ordinary indications of mania, except, perhaps, in the manifestations of the mental disease being more frequently attended with a febrile condition in puerperal, than in common mania. Dr. Denman regards what is termed moral treatment as much more appropriate and beneficial in this complaint, than medical (or medicinal) treatment. Dr. Burns, however, deems both indispensable; and while Dr. Denman seems to think that there is no actual disorder save a functional one of the nervous system present in puerperal mania, Dr. Burns is of opinion that, in some varieties of the disorder, there is such a vascular derangement of either the brain or spinal marrow, as calls for active interference on the part of the medical attendant, lest even fatal results should take place if the case be left to itself. He admits, however, that sometimes the mental aberration is the prominent symptom, and that the corporeal affection is secondary, in a degree, but this he lays down as characteristic of one form of the complaint; whilst in another form of it the mind, according to him, is much less affected than the body, and he thinks there is, in this, at least congestion of the vessels of the head. A third species of the disease Dr. Burns considers to have its seat in the spinal cord, or its vessels. Sometimes, he says, the brain, or its coverings, will be distinctly inflamed. At other times, he tells us, the state of the mind is connected with an affection of the uterus, particularly inflammation of its veins.

269. The period at which the mental disorder first makes its appearance is not uniform, but is seldom earlier than the

third day after delivery, and frequently it is not perceptible for several weeks. It is usually sudden in its accession, the patient starting from her sleep with the appearance of terror; and at other times it seems to be the consequence of excitement from some alarm. Sometimes the patient talks excessively, and incoherently, or dwells, like a mono-maniac, on some isolated idea. She may manifest the most decided incoherence, and indulge in very improper language, or imagine that some calamity has happened to her child. But her aberration is more usually that attendant on raving, than melancholy. At times she is more disposed to quit her chamber and go abroad, than to talk. She does not appear to be unobservant of surrounding objects, nor incapable of replying to questions put to her; but frequently shows great impatience and irritability. Her eye has evidently a disquieted character, and her pulse is liable to occasional accelerations. Her skin may be discoloured, so much so as occasionally to have a jaundiced appearance. At other times the skin is hot, and the tongue white, at the commencement of the complaint. The bowels have a greater tendency to constipation than otherwise; the face is rather pallid, and Dr. Burns describes the expression of the countenance as one of trepidation combined with imbecility. Headache, pain, or giddiness are seldom permanently present, but are occasionally excited by straining at stool, where there is tenesmus, or by efforts to make urine, when troubled with strangury. But there is no very distinct or permanent fever.

270. When such symptoms occur, Dr. Burns recommends the bowels to be opened in the first instance with a purgative, and to be subsequently kept free by means of gentle laxatives. A saline diaphoretic should be given, so as to keep the cutaneous surface moist; and camphor has been considered a useful and tranquillizing medicine in such a case. Blisters have

been condemned in puerperal mania, by several persons, as causing too much irritation; but Dr. Burns says he is confident that he has seen them do good, after they had discharged freely. When they do good, he tells us, they produce sleep. Opium, until the decline of the disorder, is not approved of, and Battley's liquor opii is the form Dr. Burns seems to prefer. Dover's Powder is applicable where the promotion of perspiration is indicated as well as a tranquillizing effect. Debility is best combatted by quinine and cordials, and the surest sign of these proving useful is their rendering the pulse less frequent. The patient sometimes proves refractory, refusing to stop in bed, and to take her food and medicine. Where any thing of this kind is to be apprehended, it is prudent to put on a strait waistcoat, by which means she is rendered more manageable, even from the feeling that she can be controlled. She therefore makes up her mind to submit. At times she may be found to pass the fœcal and urinary secretions without giving notice; not from any inability to retain them, but from either inattention or perversity. Venesection is not considered suitable to this species of puerperal mania, which has been observed occasionally to follow hæmorrhage. Bland nourishment, and even cordials, will be often called for to support the patient's strength. In the management of her, annoyance or irritation must be avoided. In general, it is a good rule in this, as in the mania attending delirium tremens, to appear to exercise peremptory authority over the attendants (on a previous understanding with them to that effect) rather than over the patient, who is to be addressed in a kind and conciliatory manner; but she, perceiving the ready submission of the others, will indirectly be thereby impressed with awe, though unaccompanied by terror. Every effort is to be made to amuse and interest her mind, and to divert it from any unpleasant reflections. As soon as her state will admit of it, some light

and varied employment should be contrived to occupy her attention in an agreeable manner, and every source of annoyance or irritation most carefully be removed. The sooner she can be made to change the scene, and take exercise, &c., with safety to her health, the better.

271. Some females have evinced a peculiar liability to such attacks after parturition. When this liability has been ascertained to exist, the state of the system ought to be closely watched during pregnancy, and particularly towards its close. If the patient be plethoric, moderate blood-letting should be ordered, and this more especially as the period of parturition approaches. But Dr. Burns attaches the greatest importance to the maintenance of a regular state of the bowels by suitable laxatives. After parturition, the most soothing conduct is to be pursued towards the patient, and everything calculated to alarm, annoy, or irritate her must be obviated. Laxatives, with the use of preparations of camphor, will be the most appropriate medicines. Where the patient does not sleep well, the exhibition of hyoseyamus, or the stuffing a pillow with hops for her, should be had recourse to.

272. Sometimes, in this, which Dr. Burns views as the first species of puerperal mania, or that in which mental aberration is the most prominent feature, the symptoms assume the aspect of melancholy, instead of those of active delirium. It, in such case, is rather later in manifesting itself, than the variety of the same species before described. Persistence in nursing, under such circumstances, is not approved of, and, in both varieties, mammary inflammation may have much to do with exciting the complaint and ought to be vigilantly looked to.

273. In the different form of puerperal mania, where, according to Dr. Burns, the mind, from the first, is less affected than the body, there is always fever, though not very distinct in an early stage. The pulse is rather small, but is subject to

sudden alterations of a remarkable character; under nervous excitation, it will often vary more than twenty beats in a minute. The condition of the patient, however, impresses one with the idea that she has a greater tendency to hysterical affection than to inflammation. The skin is hot, but the tongue is clean. At first there may be an absence of pain, whether in the head or elsewhere. The secretion of the milk appears diminished, but the lochial discharge is not interrupted. There usually is a tendency to constipation. The pupil is dilated, and the eye is either inexpressive, or exhibits some wildness in its appearance, though without suffusion. At times, and more especially towards evening, or during the night, symptoms approaching to those of catalepsy are often witnessed in the patient. The eye remains open, but fixed, and inattentive to surrounding objects; the body continues motionless, as if in a faint. And this state may alternate with motion of the extremities, and even curvature of the spinal column backwards. During this paroxysm, if so it should be termed, the pulse is accelerated; it continues so perhaps two or three hours; when the excitation goes off, and the patient becomes more tranquil. It is only in this cataleptic state that she appears unconscious of what is passing around her: at other times she recognises her attendants, and remembers what she has seen. When she does evince delirium, it is more in the nature of whim or caprice, or of fanciful apprehensions, than of the decided insanity before noticed. The mental irregularity, like that of the body, is subject to exacerbations and remissions. Dr. Burns pronounces this form of the disease to be dependent on, or connected with, a state of congestion of the vessels of the pia mater, or internal membrane of the brain, followed by more or less effusion of serous fluid under the dura mater, and, perhaps, in the sheath of the cord. We are to estimate its danger by the degree and persistence of the

fever. In the curative proceedings, Dr. Burns thinks that venesection ought to be, at first, employed, and that it is seldom necessary, and often injurious, to repeat it. M. Esquirol is not partial to venesection in puerperal mania, and is of opinion that it should be had recourse to with the greatest caution. He prefers applying leeches to the thighs and pudenda; and sinapisms to the nape of the neck, or to the legs and thighs. Blisters he approves of at a late stage of the disease, and also sanctions the administration of clysters. This authority regards suppression of the lochia and milk as very generally attendant upon puerperal mania. Others recommend clysters of milk and water, together with tepid bathing, and local bleeding: prohibiting venesection. When the pulse is full and strong, and does not yield to purging and the application of cold to the head, the detraction of blood from the scalp or neck, by cupping or leeching, has been advised. The sedative recommended by M. Georget in this malady is a combination of the extract of hyoscyamus and pulverised camphor, in the proportion of ten grains of each. The propriety, however, of employing the lancet must be judged of from the character of the pulse, and the effect of other means in subduing the symptoms. The head must be shaved, and the ordinary measures for reducing inflammation within the cranium tried. Blistering is most proper after depletion. When the more urgent symptoms have been got under, the treatment to be pursued in this species will not differ from that pointed out for the other form of the disorder.

274. The third species which Dr. Burns describes is that which he supposes to have its chief seat in the spinal cord or its vessels. It is apt to occur very soon after delivery, when the patient complains of restlessness, or rather inability to sleep. The head is commonly slightly affected with pain; but a very decided feeling of muscular weakness exists. The pulse at

first does not seem to be much accelerated. But symptoms of a far more alarming character soon set in : the pulse becomes frequent, the skin hot, the face flushed, the hearing morbidly acute, the eyes intolerant of light, and the eye-lids heavy. A sense of tightness of the throat, or a feeling of suffocation, is often experienced. The muscular weakness is converted into a debility of the paralytic kind ; the head becomes more distinctly affected ; thirst is urgent ; the bowels are confined : but the secretion of the milk continues to go on. Mental derangement may not yet be perceptible, further than dulness and reserve ; but it may be that irritability, and even decided insanity become discoverable. If active measures be not pursued, the paralytic symptoms will be more and more developed, the pulse more slow ; and, in some instances death has been known to supervene. Instant venesection, and, according to Dr. Burns, to a considerable extent, now becomes indispensable. On such a proceeding being adopted, the alarming symptoms have been found to abate rapidly : the skin to become cooler, the flushing to go off, the pulse to recede from 130 to 80, or lower, the eye-lids to become free from their torpor, the weight to quit the head, and the patient to experience decided relief. Free purging, followed by the application of a blister to the head, has been known to complete the cure, after general bleeding. But this is not invariably the case ; for too often the recovery is but partial. The muscular weakness still continues, and some affection of the head is complained of. The morbid acuteness of hearing, together with the intolerance of light, may also remain ; and evidence of some degree of mental aberration may likewise be present. For instance, the mother may question the identity of her child, or she may exhibit groundless suspicions, or causless apprehensions. In this form of the disorder, the appetite is usually keen ; and the bowels require to be carefully regulated. This, together with due attention to the moral


treatment adverted to, will ultimately prevail over the disease; though it may not altogether yield for several months.

275. With what Dr. Burns denominates the fourth species, where the brain and its coverings are distinctly inflamed, we are not so often concerned as with the last mentioned form, where, as we intimated, the affection is chiefly and primarily spinal, the cerebral disease secondary. But when this variety of phrenitis does occur, Dr. Burns tells us that it is caused by either determination of blood to the head, or by preternatural irritability of the sensorium, or else derived from a constitutional tendency to mania. The third day after delivery is counted the most usual time for the access of this form of the complaint, but it may take place at a later period. The pulse has been found to continue its rapidity from the time of parturition. There is an almost sleepless watchfulness about the patient; she often complains of pain, or of a throbbing sensation in the head, or in the throat, or in the ears. To this a sense of confusion may succeed, extreme acuteness of hearing and painful sensibility of light, with or without actual pain in the head. The patient's speech becomes hurried, and her attention to matters of a trivial nature is now manifested. The delirium at first may be rather tantamount to confusion of thought than to marked insanity, and the bodily sensations have evidently the lead of the mental irregularity; but, if the disease be not grappled with, furious delirium may set in rapidly; the patient will then talk with velocity and vociferously, her eyes will be in rapid motion, looking wild and sparkling, and being very sensible of light. Those symptoms of phrenitis may continue in activity for some time, and be succeeded by those of compression; and this may be attended by a short interval of reason, to be followed by recurrence of the furious delirium, perhaps alternating with a state of sullenness. The degree of inflammation will influence the rapidity or slowness of the pulse, and the

extent or intensity of the delirium. The secretion of the milk is said usually to cease in this form of the disease, though there is not an interruption of the lochia, nor constipation of the bowels as an ordinary symptom. If the complaint continue, in three or four days we may look for the occurrence of hemiplegia, to be followed by coma. The extremities become cold, the breathing laborious, and sometimes convulsions precede death. There must be prompt measures to combat the rapid progress of inflammation, when this disease makes its appearance. Free and early venesection must be performed, the antiphlogistic system must be steadily pursued. Local as well as general blood-letting will be required, purgatives, and also the cold dash to the shaved scalp, to be succeeded by blisters—in short, all the remedies applicable to inflammation of the brain will have to be put into active requisition. After inflammation has been successfully combatted, the complaint, that is to say, any remnant of mental irregularity, will have to be treated on the principles before stated.

276. In the fifth species, which Dr. Burns regards as consequent upon a diseased state of the uterus, particularly an inflammatory condition of its veins, there is fever, accompanied with delirium, which latter is so prominent a symptom as to endanger our over-looking the inflammatory condition of the uterus. If we do so, the abdomen becomes tympanitic, and the patient shortly after falls into a state of stupor. But if we diligently examine the uterine region in the first instance, we shall discover it to be painful and tender on pressure. Leeching the abdomen, together with stuping, or poulticing—in a word, most of the principles pointed out in the beginning of the chapter on puerperal fever—will now be our resource, until we subdue uterine and abdominal inflammation. Dr. Burns is partial to poulticing after leeching; and he recommends us not to forget mild purgatives. He also advises us to apply a small sinapism, or blister, to the nape of the neck. But quite enough has been

said in other parts of this volume as to the principles on which such a case should be conducted. Puerperal mania is seldom known to remain permanent.

 We neglected noticing the very general applicability of Tartar Emetic in puerperal fever, whether exhibited with or without opium. It is peculiarly suitable to the 2nd species as described by Dr. Burns, or where the propriety of venesection appears dubious. But even in the more sthenic form, after bleeding, it has proved advantageous, and an excellent substitute for more *depletory* measures. Perhaps in some of the species of puerperal mania, it would be well to try it.

CHAPTER XIX.

AFTER PAINS.

277. After pains, though not of invariable occurrence with all puerperal females, are nevertheless a very frequent consequence of parturition. They usually come on shortly after delivery, and may last even for a day or two. They are said to be less severe in a first than in a subsequent confinement; and are often increased when the mother first applies the child to her breast; hereby giving another curious proof of the intimate sympathy that exists between the uterus and the mammæ. Those pains are occasioned by uterine contraction and are considered to depend upon the presence of clots or coagula in the womb, together, perhaps, with more or less of irregular or spasmodic action of that organ. We have before spoken of pains not being without their utility in expelling foreign bodies from the uterus, which by remaining in it may become a source of formidable disease: therefore, the removal of them (the after-pains) too speedily, that is to say, before they have answered their intention of bringing the uterus into a proper state of emptiness and contraction, should not be hazarded without due

consideration. It will be necessary also to attend with discrimination to the character of any pains occurring after parturition, lest the practitioner confound the indications of serious puerperal disease with the regular and not unsalutary after-pains. So much has already been said with regard to the symptoms of peritoneal and uterine inflammation, that it is to be hoped the reader will not be likely to fail in his diagnosis; but we shall here touch again upon the subject. If the coagula be removed, as we have before advised when speaking of introducing the hand into the uterus, one exciting cause of these pains shall have been obviated. But we must likewise recollect that the large veins and sinusses of the uterus require to be closed, and the organ to be restored to the ante-pregnant condition. In the after pains, as to the diagnosis, the abdomen is not painful and tender on pressure, as it is in the inflammatory affections treated of in their proper places; nor is there shivering, vomiting, nor suppression of the milk secretion. Neither is the pulse affected in the after pains as in the formidable disorders elsewhere noticed; nor are the pains without remissions, while the distress arising from inflammation is never entirely suspended. But, after pains, though generally attributable to the causes above mentioned, are occasionally produced, or at least aggravated, by flatulence and costiveness, and then assume more or less of a *colicky* character. There also sometimes occurs in the hypogastric region a pain of a persistent character, noticed by some writers as very rare. This pain proceeds from disorder of the heart, and is considered dangerous, but its being free from *intermissions* points out its difference from the after pains; and besides it is not attended with disease of the uterus.

278. Should after pains last too long, that is, after all coagula and foreign bodies have been expelled from the uterus, or be intense or of a distressing colicky character, a purgative ought to be given, and, after its operation, opiates, fomenta-

tions, and frictions with stimulating liniments may be had recourse to. Combining assafoetida, or some such anti-spasmodic with the purgative has often a good effect. Dr. Copland recommends equal parts of castor oil and the oil of turpentine, either in form of enema, or that of draught, as very effectual. A warm linseed-meal poultice, or the warm flannel, sprinkled with oil of turpentine, and applied over the region affected, will seldom fail to give relief unless the state of the bowels, owing to flatulence and other special causes of irritation, should require particular treatment. Camphorated spirits constitute the material most commonly used for frictions in this complaint, and the opiated enemata are of much efficacy. In colic, pains may prevail in conjunction with *some* tenderness of the abdomen, and this may create alarm, by its being confounded with a tendency to peritoneal inflammation. But in the former there is not that inordinate heat of skin, nor that morbid appearance and dryness of the tongue, that we observe in the latter. The pain also in colic has very distinct remissions, the feet are often cold, the abdomen is not swollen, and flatulence is a prominent symptom. This colic pain yields to laxatives, particularly if combined with the anti-spasmodics pointed out, together with the frictions and other measures we have spoken of above.

279. Rheumatic pains may affect the abdominal muscles, or the pelvis, in the puerperal state, often caused by the too free application of cold and moisture. These are easily discriminated: they have vastly less fever than accompanies puerperal inflammation, and influence the pulse very slightly, if at all. They are "shifting, and aching, or gnawing, though sometimes pretty sharp, like a stitch." Dr. Burns advises the rheumatic pains to be combatted by friction with laudanum, by sinapisms, mild diaphoretics, and the usual treatment for the rheumatic complaint; but they will seldom resist the pills of

opium, camphor, calomel and tartar emetic, we have on a former occasion, and in the appendix, taken notice of, more especially if aided by the external application of the naphtha liniment.

HYSTERALGIA.

280. This pain of the uterus has been noticed by writers as quite distinct from the fore-mentioned after pains. It may occur shortly after delivery, and is distinguished by severe pain in the back and lower part of the abdomen, frequent pulse, sickness and faintness. Sometimes there is a discharge accompanying the pain; or it may be followed by the expulsion of coagula. But hysteralgia may be present, and be productive of severe bearing-down pain, though neither coagula be expelled, nor inversion of the uterus, nor retention of urine take place. Dr. Baird attributed it to "some bad position of the uterus." It has, therefore, been proposed to press against one of the sides of the abdomen, for the purpose of rectifying the supposed malposition of the womb. But Dr. Burns advises an anodyne enema to be administered if hysteralgia occur immediately after labour, and afterwards purgative medicine as soon as the stomach will bear it, and subsequently an opiate. A variety of hysteralgia may come on at a later period, within three or four days subsequent to parturition. In this case, vomiting may take place, and the pulse may become rapid, even mounting above 120 in a minute, the skin may be hot, the uterus painful on pressure, and the lochia obstructed. But there seldom is rigor. The pain abates after a few hours, and the complaint, unlike the peritoneal disorder, readily yields to suitable measures. Spasm of the uterus, and sometimes of the intestines, likewise, is considered the cause of this affection, which is more likely to be mistaken for puerperal fever than

any other. It is seldom that it is not preceded by a severe or tedious labour. It comes on more suddenly than inflammation, and the pain becomes severe more rapidly. It is also remittent. An active aperient enema should be administered to open the bowels. The abdomen ought then to be fomented; and Dr. Burns recommends a warm poultice to be applied. As there have been instances of hystericalgia being the forerunner of inflammation, if speedy relief should not follow the measures advised, it would be prudent to take away a little blood, and give another anodyne enema; some saline diaphoretic, with a proportion of antimonial wine, should then be exhibited, so as to promote free perspiration. Purgatives, and the turpentine epithem to the abdomen, if requisite, after the poultice, will probably complete the necessary means in this complaint.

SWELLED LEG.

281. A swelling of either one or both of the lower extremities occasionally takes place, at uncertain periods after delivery. It sometimes occurs so early as the sixth day, and at times is not experienced before the sixth week, but a fortnight is the most frequent period. The manner in which this affection of the limb makes its approach is by no means uniform. Often there is a very evident disorder in the uterine region preceding the swelling of the leg. There may be pain and tenderness on pressure in the hypogastrium, accompanied with distress and difficulty in making urine. Sometimes febrile symptoms are observed, such as rigor, hot skin, quick pulse, and thirst. Stiffness, swelling and pain in one of the groins is not of unusual occurrence before the disorder fully developes itself. The swelling, &c., being referible to the region of the round ligament of the uterus, or to that of either the tendon of the psoas muscle, or of that of the origin of the sartorius and rectus

muscles. At times the inguinal glands at the superior part of the thigh are perceptibly swelled at the onset of the disorder, but this symptom is frequently absent. Sometimes there are symptoms as of a rheumatic affection, in the back and the hip-joint. The parts within the pelvis are at other times very tender and painful to the touch; and the os uteri has been remarked as remaining open, though not more sensitive on an examination than the vagina generally. The veins of the uterus may be the seat of disease, and, it is thought, most commonly, though not uniformly, are more or less attacked with inflammation in this complaint; and both peritoneal inflammation, and some inflammatory affection of the thorax and diaphragm may be connected with it. Some authors have regarded the disorder as essentially inflammation of the veins of the limb, associated with uterine phlebitis. However as the disease makes its approach, the leg soon becomes swollen; and this, at times, without any of the before-mentioned symptoms preceding its enlargement. The pain and swelling may first take place either at the knee, or in the calf of the leg; spreading upwards; or it may commence above, somewhere in the inguinal region, and extend downwards. The pain is generally most acute in the direction of the sartorius muscle, and also darts along the course of the saphenus nerve, and down to the heel. There is usually a very distinct affection of the saphena vein, its coats feeling thickened and indurated, and it being extremely tender on pressure. A considerable swelling of the leg soon succeeds the pain, generally taking place within twenty-four hours; and its size is sometimes double that which is natural. It is hot, but not red; in this respect following the course we commonly observe in inflammation of the veins. It is pale, and somewhat shining, at first so tense that it does not pit on pressure; but subsequently, when it becomes less tense retaining more of the impression of the finger. The

nerves of the limb appear to be quickly implicated in the disorder, for with the pain comes a muscular weakness, or incapability of using the leg. The constitutional symptoms are soon aggravated. The pulse has been found to rise to 140, with a sharpness combined with feebleness; the appetite fails; the thirst increases; and the countenance acquires a pale and almost cadaverous aspect. The swelling of the limb is not of an anasarca nature: it does not increase from being kept in a depending posture; nor, when there were opportunities of making post-mortem examination, was serous effusion discovered, but rather a coagulable lymph, showing the inflammatory nature of the affection. It has been sometimes noticed that this complaint was preceded, during labour, by a pain along the course of the saphenus nerve. Symptoms, however, lead us occasionally to suppose that a connection may sometimes exist between mammary irritation and the swelling of the leg, and this more especially if thoracic or diaphragmatic disorder prevail, and, as is at times the case, if the superior extremities likewise become swollen.

282. In the treatment of this complaint, which is sometimes obstinate, if an inflammatory condition of the uterus, or of the neighbouring parts, prevail, that should be subdued by leeching, &c. The bowels should be opened, and kept so, but without decided purging. After leeching and stuping, the application of a small blister to the loin may prove useful, as may be inferred from what has been said. Wherever there are painful spots along the legs, leeching and stuping will also be proper, and subsequently the application of cloths wetted with some cooling lotion, such as a solution of the acetate of lead, may help to keep down the inflammation. To tepid fomentations, however, gentle frictions with warm oil, or camphorated oil, may be conjoined with benefit. Where the pain and irritation are considerable, we should have recourse to the use of opiates.

Cream of tartar is a medicine that has been freely employed in this disorder, and with good effect. Should venesection be indicated by the state of the pulse, and the prevalence of inflammatory symptoms, it is only at the very commencement of the disorder it can be advisable. After the disease has freely developed itself, general bleeding is calculated to do harm. There is a great tendency to depression and sinking of the strength in this complaint, as, indeed, is common in all inflammatory affections of the venous system. Saline draughts may at first be given to tranquillise the stomach, but they are not to be persisted in so as to keep up free perspiration. Tonics, such as infusions of bark, and sulphuric acid, together with opiates, will be much more applicable to this disorder than a debilitating system of treatment; and, in the latter stage, some wine may be given. Dr. Burns recommends bark, with small doses of calomel, when there are shifting pains of a rheumatic character. The functions of the intestinal canal are, throughout to be kept regular by means of suitable aperients; and, when foetid discharges from the uterus take place, which are occasionally experienced, either tepid water, or the infusion of cammomile-flowers, ought to be injected into the vagina. The diet should be nutritious, but not exciting. The patient must be cautious of exposing herself to cold, either during the progress of the disorder, or in convalescence. When the inflammation of the limb has subsided, the weakness may be removed, and the tone of the part restored, by friction with camphorated spirits, the application of a roller, the gentle use of the flesh-brush, followed up either by bathing the limb with tepid or cold salt-water. This complaint has been succeeded by suppuration and abscesses in various muscular parts, as in the thigh; and surgical assistance has been required to discharge the purulent matter by proper openings. There are several practitioners who may approve of treating this disorder on the same principles as have

been found useful in phlegmasia dolens, as described by Dr. Graves, in his clinical lectures at the Meath Hospital, and as recommended by the late excellent and much-lamented Dr. M'Dowell; namely, after the application of leeches to the part affected, and encouraging bleeding from the leech-bites by warm fomentations, an ointment composed of a drachm of extract of Belladonna to every ounce of mercurial ointment, is to be spread on large pieces of lint, and applied to the limb, after the leech-bites have ceased to bleed. To this, internal doses of opium were rather freely added, in the second stage of the disorder. The bowels were regulated, generally by the exhibition of a few grains of hydrargyrum cum creta three times a day; and, at an appropriate stage, when the strength needed support, sulphate of quinine and wine were given. But local, not general bleeding, was pursued. Dr. Burns, however, does not appear to be partial to the use of mercury in such cases; in puerperal fever, he discards it—saying, “Mercury has been recommended by some, but it is seldom if ever useful.” We suspect that the Professor has imbibed some prejudice to mercury, from witnessing its frequent abuse.

282. It is usual for the pain to abate when the swelling of the limb fully takes place; but any attempt to move the member occasions great distress, and sometimes a tendency to fainting. The lymphatics, as well as the veins of the part, are manifestly in a disordered state. The urine is of a very peculiar appearance in the puerperal swelled leg, being remarkably thick and of a muddy colour. Sometimes the alvine dejections are pale and clayey. When the second leg becomes affected, it is not in the way of a metastasis, for the first does not appear to be relieved by the occurrence. Indeed, in some bad cases the affected limb has never completely recovered its original size and tone. Dr. Denman seems to attribute the swelling of the limb to “the blocking up of all passage for the lymph through

those (the swollen inguinal) glands." This is not improbable, and would point out the necessity of our applying ourselves to the early reduction of inflammation in the region of the groin. This inflamed condition of the inguinal glands has been considered to follow a vitiated state of the uterine secretions, which for days before the access of the complaint, are sometimes perceived to be offensive and fœtid in the extreme. It has been said also, that the disease has been connected with the retention of portions of the placenta; and this doubtless would have a tendency to vitiate the uterine secretions, which, passing through the inguinal glands, in the course of absorption, might be calculated to produce the consequences before described. Dr. Denman was an advocate for supporting the patient's strength, in this complaint, with cordial medicines and by a liberal use of wine. He adopted this decision in consequence of the extreme weakness and irritability so conspicuous in this disease. He gave opiates to soothe the general irritability, and promoted the urinary and cutaneous secretions by administering the following draught:—℞: Liqueur. ammoniæ acetatis ℥ss. Aquæ menthæ viridis, et aquæ puræ āā℥ss. Fiat haustus 4 ta vel 5 ta quaque horâ sumendus. Sometimes to this draught he added a few drops of tincture of opium, especially at bed time. The quantity of the acetate of ammonia in the above prescription may be increased, and, in the event of great depression, carbonate of ammonia may be added to it. As a liniment for the swelled limb, Dr. Denman recommends a drachm of camphor to be dissolved in an ounce of oil of olives, or some of the expressed oil of mace to be brought to a proper consistence with olive oil; and, whichever of these combinations he used, to it were added five or ten grains of powdered opium. With this liniment the most painful parts, or the whole limb, he directed to be gently anointed, night and morning, and afterwards covered with loose flannel. He was afraid that, by removing obstruc-

tion of the inguinal glands, we only made way for the introduction of the virus into the general system. But, by keeping up that obstruction, it does not appear to us that much security could be added to the patient, while the local disorder and distress would be greatly aggravated. Dr. Denman deprecated purging in this complaint, and also condemned clysters, on account, it would seem, of the distress which a change of position to admit of their administration and effect would occasion. Still he sanctioned the occasional use of sulphate of magnesia, or any other medicine of the kind. We don't well understand those distinctions. He was for a generous diet with wine, as far as the patient's appetite would permit her to indulge in them. When the health was in some degree restored, and the swelling of the leg acquired somewhat of a chronic character, Dr. Denman was in the habit of giving half a grain, or a grain of calomel, at bed-hour, with or without an opiate, and of exhibiting a decoction of cinchona or of cascarilla, with a saline draught, or some saline aperient, or a strong infusion of burned sponge (he knew nothing about the preparations of iodine), two or three times a day. And at other times he preferred giving from three to five grains of calomel twice a week, with a purgative draught in the morning, and some of the before-mentioned mixtures in the intervals. Sometimes he had recourse to the crystals of tartar; or conium with a decoction of sarsaparilla, and various other things, including the preparations of iron, particularly the ferri ammonio-chloridum. The limb he advised to be supported by a slight flannel bandage, drawn gradually tighter, and either the volatile liniment to be occasionally used with it, or one composed of three parts of the linimentum saponis, and one part of tincture of cantharides; and he likewise speaks of small quantities of mercurial ointment as proper; but this is when the inflammation has departed, and is succeeded by a chronic state of the swelling. For dispersing this, he likewise recommended the frequent ap-

plication of small blisters to various parts of the limb. To say the truth, though not a little useful information may be derived from the other treatment we have described, we have much more confidence in that recommended for phlegmasia dolens, which is, in our opinion, essentially the same complaint with the one under consideration; and which treatment, as described above, we believe will be found far more effectual than any of the other plans laid down. It should be added, however, that all symptoms of uterine and peritoneal inflammation must be promptly met, and treated in that manner which experience appears to sanction, as mentioned under the proper head.

284. A paralytic state of the inferior extremities sometimes follows parturition. At times the paralysis is accompanied with a painful sensation of the muscles. It generally goes off in a few weeks, more especially if aided by friction, tonics, the shower-bath, gentle exercise on crutches, together with attention to the state of the bowels and digestive organs. It may, however, be more obstinate, and in such case require to become the object of systematic medical or rather surgical treatment. We have known it to be considerably protracted.

285. Strangury, after labour, may claim our attention, and be the consequence of great sensibility of the urethra and the neck of the bladder. The use of the catheter may be rendered necessary by this affection, and small doses of the carbonate of soda with hyoseyanus will be advantageous, while linseed-tea or barley-water, may serve to remove irritation therein. Anodyne enemata are of considerable efficacy in relieving painful affections of the urinary organs. Fomentations, and laxatives with opiates, are indicated in this complaint, especially where irritation runs high.

286. Where pneumonia occurs in parturition, it will require a similar course of treatment as at any other time, making due allowances, however, for the peculiarities of the puerperal state,

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If the symptoms be pleuritic, local bleeding, or even venesection, and blistering, may be called for. The bowels are to be kept in a regular state with laxatives.

CHAPTER XX.

OF THE ORDINARY TREATMENT AFTER DELIVERY.

287. Though we have anticipated this subject, in a great measure, in previous parts of the work, still it will be proper here to take a general glance at the various matters which claim the practitioner's attention after the third stage of labour has been completed by the expulsion or extraction of the placenta. The first thing, after we have satisfied ourselves that there was not plurality of children in utero, is to introduce the finger into the vagina, for the purpose of ascertaining that no injury has taken place either, of the recto-vaginal or vesico-vaginal septum, and that the uterus has not been inverted or prolapsed, and likewise that hæmorrhage has not recommenced. The abdominal belt, or binder, is then to be adjusted and rendered agreeable to the sensations of the patient. The folded sheet and blanket, that were placed across the bed under the patient's hips, and which inevitably must have become wet and soiled, should be gently drawn from under her ; and it is customary to promote her comfort by putting an open flannel petticoat upon her. A warm napkin is then to be applied to the vulva, and the patient should be placed in the posture most conducive to her ease and repose. The bed-clothes are to be adjusted so as to keep her

from chilliness, but not too warm; and if she have any desire for some light nourishment it should be given to her. The pulse should be felt; and the nurse be ordered not to permit the patient either to make exertion, or to take stimulants. An erect posture is dangerous, directly after delivery, as conducive to hæmorrhage, and often productive of syncope, until the abdominal viscera, and the circulation, and the uterus, have accommodated themselves to their new state. But here we do not mean to dispute the propriety, after a reasonable interval, of the doctrine insisted upon by Professor Rigby and others, respecting the necessity of giving coagula and other foreign bodies an opportunity of escaping from the vagina by changing from the horizontal posture before a putrid change could take place in those residua.* Both extremes should be avoided: the uterus must have time allowed it to assume the condition of permanent contraction, and the system to adjust itself; and, in due time, as prudence will dictate, improper substances must be permitted to come away from the genital canal. But when we are making the primary arrangements after parturition, there must be as little excitement or disturbance of the patient as possible. Even should it be necessary to change her clothes, in consequence of their having become wet through perspiration, &c., it is to be done slowly, and without altering her recumbent position. It will not be advisable either to deprive her of the refreshing access of pure air by drawing the curtains too closely around her, nor to keep too hot a fire in the room, nor to heap bed-clothes upon her. In summer, a cautious ventillation may be highly proper, and obviate several complaints that are apt to rise from the want of it; but due precaution must be observed against proceeding to such a length as to endanger catching cold. The apartment, likewise, ought to be

* See chapt. on puerperal fever.

kept quiet, and an opportunity for the enjoyment of tranquillity and repose be afforded the patient after her exhausting fatigue ; instead, as is too common, of having her kept in a flurry by persons crowding about and conversing with her, in the agitated state of her frame.

288. On the practitioner's next visit, which ought, if possible, to be within the twelve hours subsequent to delivery, he ought to inquire whether his patient slept: whether she had severe after-pains; whether there be much discharge; and he should examine into the state of the pulse; and ascertain whether she had made water, or had a desire without the ability to do so? If he find the latter to be the case, a cloth wrung out of hot water should be applied over the region of the bladder; and, if this fail in producing the power to evacuate that organ, the catheter ought to be introduced, and the bladder be emptied thus as often as requisite. This is likely to be particularly necessary after severe or instrumental labour, and is especially indicated when the patient has pain in the lower part of the abdomen together with a desire of making water.

289. More than twenty-four, or at the utmost thirty-six hours, should not be permitted to transpire after delivery without the patient procuring a stool, either by means of an enema or a laxative, if the bowels have not acted of their own accord. It will be proper, also, to inquire whether there be any troublesome symptoms of the milk fever, more especially if the patient be accustomed to have it severely: to ask whether the breasts be painful and tense? Should this be the case, a moderate dose of a cooling saline laxative will be preferable to a clyster for her. But if she habitually have but little milk in the beginning, and be delicate, an enema should be given rather than internal medicine. If she be not disposed to nurse the child, a brisk laxative ought to be administered, and repeated at the end of two days.

290. The lochial discharge is usually sanguineous for some days after parturition, when it is regular for it to become of a greenish colour, afterwards pale, then to decrease in quantity, and finally to cease in about a month after confinement. But it terminates sooner with some women than with others. During the continuance of the lochia, the vagina and the vulva ought every day to be washed with tepid milk and water.

SLIGHT MILK FEVER.

291. About the third day after delivery, the breasts generally become considerably distended with milk. Many females at this time feel the tension of the mammæ very unpleasant, and have, besides, a considerable acceleration of the pulse, and some febrile symptoms are apt to occur. Little more, however, is usually requisite to be done, under such circumstances, than keeping the bowels free, and applying the child to the breast. A cooling regimen should be observed if the symptoms run high.

DIET AFTER PARTURITION.

292. As to the regulation of the diet of women after parturition, that will, in some degree, depend upon circumstances. If they purpose suckling their children, a larger proportion of fluids should be given them, than if they do not. For the first two days nurses may breakfast on tea and cold toasted bread, and dine on arrow-root, or weak chicken-broth, Their supper may be of panado; but good gruel is the most usual hospital diet, and appears to agree well with those who take it; it is necessary, however, that the habits of the patient, and her inclination, too, should be consulted, so far as this can be done with propriety. The ordinary drink of females intending to

nurse ought to be toast-water, or barley-water, or, if they fancy it, occasionally whey; but vinous or malt liquors must not be given for some days, unless feebleness and debility, without any febrile symptoms, require the cautious exhibition of stimulants, and then a little wine may be added to the panado, or sago, or a little wine-and-water be taken at dinner, which latter may consist of a small portion of boiled chicken, as soon as the stomach can relish it. Where the patient is not to nurse, liquids are not to be indulged in. The diet, in such case, ought to be of the dry kind, and ripe fruits, rather than drink, should be had recourse to for the purpose of quenching thirst.

293. It is not usual for women to rise to have their bed made before the third day; but the period for their sitting up for this purpose must be regulated in a great measure by their strength: some females being much sooner able to bear exertion without inconvenience, than others. However, by transferring them to a sofa, they may have the comfort of a well-made bed afforded them. Neither should the remarks made in the chapter on puerperal fever [240], and to which we have already alluded in the present chapter be overlooked, as to the advantage of affording, by position, an opportunity for getting rid of offensive matter from the uterus and vagina. But this does not imply any sanction for trespassing on the strength of the patient, or disregarding her symptoms of uneasiness at too prolonged a departure from the recumbent posture. The time for removing from the puerperal chamber is seldom less, under the most favourable circumstances, both as to recovery and weather, than ten days or a fortnight; but where there is much delicacy, or severe weather the period for changing the apartment will be more remote. Females, after the puerperal state, are not generally fit to venture out into the open air before a month has expired; the time, however, must be regulated by a variety of

circumstances. The inconveniences to be apprehended from quitting the bed too early, are increase of the lochial discharge, and a prolapsus uteri; for the uterus and its ligaments continue in a relaxed state for some time, and cannot resist the action of the weight of the organ in a depending position. Had prolapsus of the uterus been previously experienced by the patient in any degree, she must observe the recumbent posture for an increased period; but this may be done on a sofa, by which means the relaxing heat of the bed will be avoided. In such cases, it is customary to give a purgative every third or fourth day, and to bathe the vulva, &c., with a mixture composed of two parts of rose-water, and one of spirits, or eau de Cologne. After a fortnight or three weeks, tonics mixed with some mild diuretic medicine may be commenced with much benefit. We thus may promote salutary absorption in the uterine region.

TREATMENT UNDER CIRCUMSTANCES LESS FAVOURABLE.

294. Sometimes our patient may not go on so much to our satisfaction as the foregoing observations would imply. We occasionally meet with distressing palpitation after delivery: a sense of suffocation may accompany this thoracic agitation; and even flushing of the face, with a beating sensation, or giddiness in the head. There may also be considerable rapidity of the pulse, and great apprehension of approaching dissolution on the part of the patient. Timidity of mind and langour of body usually succeed to this paroxysm, which, in addition, is sometimes followed by profuse perspiration. If there should be frequent returns of the affection, the stomach is liable to become flatulent, and the temperature of the body is likely to be variable. It is usual to give æther and tincture of opium, in rather free doses, during such paroxysms; and antispasmodics, laxatives,

and tonics, in the intervals between them. Where the pulse is excited, the breathing affected, and debility, as is often the case, associated with the other symptoms, advantage will be derived from administering, twice a day, a draught composed of a drachm of tincture of *Columba* and ten drops of the tincture of digitalis in ten drachms of camphor-mixture, which may be rendered more agreeable by the addition of syrup of Tolu or of saffron. When those indications of nervous irritability are present, the removal of the patient, as soon as practicable, to the wholesome atmosphere of the country is desirable.

295. Hysterical symptoms are to be treated on the general principles applicable to that disorder. An enema of castor oil and oil of turpentine, with the addition of ten grains of pulverized camphor and a drachm or two of *assafœtida*, has often great influence over spasmodic affections like those of hysteria, and violent commotions of the nervous system, at the same that it evacuates the bowels of sources of irritation. The customary practice, however, is to give large doses of opium, and other antispasmodics, together with purgatives. When the patient is subject to syncope,* Dr. Burns recommends the exhibition,

* Dr. John Kelso, of Lisburn, has published a very clear and satisfactory account, in the *Lancet* of March 21st, 1840, of a puerperal affection, which we think the author justified in saying that most "Practical writers on obstetricity have either wholly overlooked this particular affection incident to the puerperal state, or, perhaps, more correctly, have confounded it with syncope, &c."

The occurrence of this affection, however, is so rare, that Dr. Kelso calculates it does not appear in more than one case out of 500.

The progress or "history" of this complaint, Dr. Kelso describes in the following words:—

"Supervening on tedious and rather severe labours, it occurs, in from twenty to thirty minutes after delivery of the child, and in from five to ten after the expulsion of the secundines.

the instant the child is born, of laudanum and the aromatic spirit of ammonia in combination; and no doubt it is a very powerful excitant of the nervous system; the maintenance of due support of the abdomen by means of the binder will, however,

Attacking those of a nervous or sanguineo-nervous temperament, it suddenly develops itself without any very characteristic symptoms of premonition, other than, perhaps, a sense of uneasiness or oppression at the præcordia, with some feelings of vertigo, and an undefined sense of impending danger. Conjoined with these, there may be evinced some degree of restlessness; a slightly accelerated, rather expanded, and easily compressible pulse; frontal head-ache, and some vacancy, if not anxiety, of countenance. Symptoms, therefore, of the kind we have adverted to, especially when occurring soon after confinement, and not originating in uterine effusion or rupture of this organ, or other injury of the soft parts engaged in the process, are not, it need hardly here be observed, to be looked upon without suspicion.

“ To these precursory symptoms, which may be more or less marked, hysterical and protracted insensibility or stupor rapidly supervenes. The eyes remain either partially open, rather more prominent than ordinarily, and fixed, or the upper eye-lids languidly droop over the eye-balls, exhibiting to view some portion of the latter; the respiration of the heart (which still continues) though regular, is weak, without impulse, and energetic, giving rise to weak, small, and easily compressible pulse, which in the hurry and excitement of the moment, may at first readily elude detection by the finger. All consciousness becomes suspended; the countenance is wan, and without expression; and the general surface, together with the prolabia, is somewhat pallid, and colder than usual, from the languid and inefficient circulation of the capillaries. The extremities both upper and lower, but especially the latter, become cold, and are either slightly rigid, retaining, perhaps, for a time the position in which they may be placed, or feeble and lifeless. On more minute examination, no unusual vaginal discharge or accumulation of blood in the cavity of the uterus is discoverable. From this, at first view, most alarming condition, the woman is with much difficulty, and then but only temporarily, aroused by the smart pinching of some portion of the integuments between the fingers, loud bellowing in the ears, the application of volatile salts or the vapour of burning feathers to the nostrils, dashing cold water on

be found very preventive of syncope. Dyspnœa is not an unfrequent consequence of the fatigue of the abdominal muscles which happens during labour; those muscles being employed in the agency of respiration. Making the abdominal bandage a little tighter, and giving a moderate dose (20 or 30 drops) of tincture of opium, will tend to relieve this affection. Sometimes however, the diaphragm is also so affected, and the patient finds a difficulty in inspiration, whereas the mere fatigue of the abdominal muscles interferes more with expiration. This affection of the diaphragm may produce an acute sense of suffocation, with a sharp pain in the side, back, or epigastrium, paleness of the countenance, and rapidity of pulse. The exhibition of a

the face, &c. Indeed the hysterical, or, perhaps, cataleptic stupor, has so prostrated for a time all the powers, vital as well as animal, that it seems impossible, by every even the most energetic means, to break in upon, or overawe the regular course of the paroxysm, or rather series of paroxysms, of which the affection, properly speaking, consists."

Dr. Kelso states the whole period of this prostration of the vital powers to continue for a period varying from three to four hours. But it is marked by intermissions which become each more distinct than its predecessor, while the recurring paroxysms grow manifestly less intense, as well as of considerably shorter duration than those which previously occurred, until the complaint takes its departure altogether.

It is between the paroxysms that we are advised by Dr. Kelso to have recourse to remedial measures. The M. M. which he recommends consists of stimulants and cordials, chiefly wine or spirits, together with a table spoonful every half hour of the following mixture:—

“℞: Spiritus ammoniæ aromat. ℥ss;
 ——— Lavandulæ comp. ℥ij;
 Misturæ Camphoræ, ℥iv;
 Aquæ cinnamonæ, ℥ij. Fiat Mistura.

Cordials and ginger tea, he directs to be given ad libitum.

On recovering from those paroxysms, the patient appears surprised at seeing so much demonstration of anxiety around her, and seems not at all conscious of what she had undergone. She feels but slight indisposition—perhaps a trifling headache,

full dose of tincture of opium with æther, or with the compound tincture of valerian, aided by the application of the hot flannel moistened with oil of turpentine to the epigastrium, will scarcely fail to remove this complaint. This diaphragmatic spasm is distinguishable from pleurisy by its being more rapid and more acute in its access than the latter, and by its not being preceded by a shivering fit, as pleurisy most frequently is. Difficulty of breathing may, likewise, be occasioned by the binder being too tight, as well as too slack. The remedy in this cause is obvious.

COLIC.

296. When colic occurs within a few days of delivery, a purgative enema ought to be given at once, and this should be followed by an opiate and carminative combined. An anodyne enema should be administered if the opiate do not remain on the stomach; but the fœtid and camphorated enema of which we spoke above [295] will, probably, be found still more effectual. Warm fomentations afford much relief in the pains of colic, and should not be omitted; and so does the turpentine epithem. Tincture of assafoetida and that of hyoscyamus combined, in camphor mixture, or mint-water, correct flatulance,

or some trivial soreness in parts of the body, a thirst, and dryness of the mouth and lips, the consequence, in all probability of the stimulants with which she was so plentifully supplied.

It will not be requisite for us to copy the two very descriptive cases of this complaint which Dr. Kelso has communicated to the *Lancet*, inasmuch as the foregoing delineation appears to us to be quite sufficient to convey to our readers a complete idea both of the affection and the mode of treatment. But we cannot conclude without observing that Dr. Kelso recommends that every reasonable effort will be made to keep alive the attention of the patient, by conversation, &c., during the intervals between the paroxysms, for the purpose of "breaking in upon and subduing the catenated chain of functional derangement."

where the stomach remains disturbed, small effervescing draughts with a few drops of laudanum in each, ought to be given. When that distressing and dangerous pain, cramp in the stomach, occurs, Dr. Burns recommends at least 60 or 80 drops of laudanum, with a drachm of sulphuric æther, or two drachms of the aromatic spirit of ammonia, in a sufficient quantity of water to be given. To render the relief more permanent, either the turpentine epithem, or a sinapism, ought to be applied to the pit of the stomach. Pain in the region of the kidney will require fomentations, perhaps opiates, enemata, purging or even leeching, with sinapisms, or blisters—according to its obstinacy. If the pulse be indicative of the necessity of general bleeding, even this may be called for in the last-named affection. The carbonate of soda with hyoscyamus, as we have before remarked, will be found a good palliative in slight attacks of this affection.

297. Dr. Burns speaks of females who had suffered from disease of the spinal cord being exposed to great hazard after parturition.* He says that often, within half an hour of the placenta being expelled, or after a longer interval, they feel great debility and sinking, with or without decided sickness, although they have not had any unusual discharge of blood. Still they insist on their having flooding, even when nothing of the kind exists. There may be no spasmodic action of the uterus on those occasions, but a false sensation in the course of the nerve. Dr. Burns states that he has found this sense of sinking give way to the exhibition of thirty drops of laudanum, followed by small doses of wine, brandy, the aromatic spirit of ammonia, or the compound tincture of valerian. This sense of sinking should not be overlooked, as it may terminate in an entire prostration of the vital powers. The persistence of this

* See note to page 384.

complaint may be followed by affection of the head, and inflammatory symptoms, ending in puerperal mania; or in paralysis, with slow pulse, laborious breathing, and a fatal issue. In some cases tumidity of the abdomen precedes death. The state of excitement, should it supervene, will demand general bleeding, as well as the application of leeches, etc., to the head, the free use of aperients, and, probably, blisters to the back of the head, or nape of the neck.

THE "WEED," OR EPHEMERAL FEVER.

298. This sometimes is a complaint of but short duration, consisting of only one paroxysm, completely terminating within twenty-four hours, or at the utmost in forty-eight hours, and without recurrence. But it may be converted into an intermittent, or even continued fever of a protracted kind. While it does remain, it differs but little from the ordinary intermittent fever. A regular cold fit, succeeded by a hot fit, and that of perspiration, will be experienced, and that in a severe degree. We leave those who are desirous of speculating on the physiological causes of this disorder to consult the enlarged observations thereon in Dr. Burns' voluminous Treatise. The disorder is seldom longer in making its appearance than a week after parturition, but may occur at a later period. Irregularity of diet, or causes acting, directly, on the origin of the cerebral or spinal nerves, have been severally regarded as capable of producing the "weed." The application of cold to the surface, so as to induce an unpleasant sensation, either during the puerperal state, or during the period of lactation, has been thought to be capable of becoming an exciting cause of this fever, when fatigue, exhaustion, or disturbance of the passions, or want of rest had given a strong predisposition to disorder of the nervous system.

299. The attack has been observed sometimes to commence by the patient starting in terror from a dream, experiencing immediately a rigor, with rapid pulse succeeding ; or the shivering fit may come on with pain in the back and head, following improper exposure to cold. There usually is pain in the head, more especially in the region of the eyes, and experienced during the cold and hot fits. The pulse is considerably accelerated and irregular, until relieved by the profuse perspiration of the third fit, which often puts a complete termination to the disorder. The thirst is great, the tongue furred, the stomach generally flatulent, and the bowels constipated. The mind is very often timid and apprehensive of death. Occasionally, there is delirium ; and shifting pains in the abdomen have been complained of, probably connected with flatus. The secretion of milk is diminished when the complaint does not speedily go off. When it does not promptly subside, the paroxysms may recur daily, the cold fit, often with a pain in the back, occasionally making its appearance an hour or two earlier each succeeding day. And it is regarded more unfavourable this circumstance occurring than when the paroxysms are postponed. But a continued fever, without the distinct cold fits, may take the place of that we have described.

300. It is thought that females who have endured severe labour, and who, also, have had the bowels insufficiently attended to, are the most subject to this disorder ; but it is not altogether confined to such. Symptomatic fever is distinguished from this, by pains in particular parts preceding the former, and by its not having the pulse, in the first instance, so rapid, as it is in the ephemeral fever.

301. In the treatment of this complaint, we should strive to bring the cold fit speedily to a termination, by giving small quantities of some tepid fluid, such as warm whey, &c., and by applying heat to the stomach and back. As soon as the hot fit

comes on, the bed-clothes ought to be cautiously diminished, and saline draughts, with diluents, should be administered, with a view of accelerating the perspiratory stage. But we are not to push sweating to excess, as that may induce debility, and rather occasion the recurrence than the subsidence of the complaint. Neither should the perspiration be unseasonably checked : the keeping it up, by means of tepid drinks, for about five or six hours will be amply sufficient. After the sweating has ceased, the patient ought to be supplied with a change of linen very carefully warmed, and also may have a little wine, if she experience a feeling of exhaustion. During the paroxysm the patient is to be secured from the accession of cold. Should local pains prevail, together with a full as well as frequent pulse, a small blood-letting may be of utility ; but this should be followed by a purgative, as soon as the stomach will permit it to be exhibited, so as to open the bowels freely, which is of great importance in the treatment of this disorder. Where the tongue is foul, and nausea prevails, either five grains of ipecacuanha, or so much warm infusion of camomile as will suffice to bring on very gentle vomiting, ought to be given, even in the cold stage, and this will tend to correct the subsequent stages. The patient ought to be kept, during vomiting, in a position the most favourable to her ease, and studiously guarded from cold.

302. Should the fits recur without any obvious cause, Dr. Burns advises them to be checked by giving an opiate combined with æther, just before the expected accession, applying heat to the back and stomach the moment the chill is felt, and rubbing the entire spine with some stimulating embrocation, such as camphor dissolved in the oil of rosemary. Attention to the bowels, guarding them from irritation, as well as keeping them in a free state, is especially necessary. It may be requisite, likewise, to have recourse to tonic medicines, such as in-

fusion of bark and sulphuric acid, or the sulphate of quinine, where the disease shows a disposition to continue. And, in the latter case, nursing may have to be abandoned. A nutritious diet, and a little wine, should be given; and, as soon as it can with propriety be done, the patient ought to be removed to the country. Sponging with vinegar and water, after the cold fit had passed over, has been found beneficial in some protracted cases. A little warm negus may be given to remove any temporary chill this practice might occasion. It is more particularly recommended to have recourse to this measure where the complaint has a hectic appearance.

303. Where this, or, indeed, any other fever occurs, we ought very carefully to examine the hypogastric region, for any symptoms of inflammatory action in that quarter. The mammary region ought also to be looked to, as instances have been known of disease of the breasts, though at first very obscure, being the original cause of ephemeral fever. When hectic fever is present, we may count upon the existence of local disease and suppuration, especially of the uterine veins. Where fatal cases occur, death is commonly preceded by comatose symptoms, or vomiting of dark-coloured matter. Sometimes an obscure disease, attended with suppuration, has taken place within the pelvis, and has been supposed to proceed from cold being too freely applied to the part. This is a consequence to be apprehended from the application of cold where there is great local excitement and vascular action. Adhesions, in such a case, may take place, or even suppuration, without the inflammation being traceable by any distinct pain on pressure. The fever, in such an instance, will be of the hectic kind; and matter may ultimately make its way to the surface, either at the groin, or at the gluteal muscles. It would then require to be let out by a surgical incision, and will sometimes demand a varied treatment accordant with the symptoms.

SEVERE MILK FEVER.

304. We spoke of the milk-fever in the commencement of this chapter, and fully enough for ordinary circumstances, but it may be well here to remark that this fever is sometimes of so aggravated a character as to be preceded by a sharp rigor, and a distinct febrile paroxysm, going off with perspiration so that it might chance to be mistaken for the ephemeral fever. The fulness and painful tension of the breasts, however, serve to distinguish it. Purging, with very mild diaphoretics during the hot fit, will suffice to remove it; but the early application of the child to the breast, as we have before remarked, serves to obviate it.

305. The miliary fever is another complaint to which women are sometimes subject after the puerperal state. It has been found to occur in connection with other puerperal disorders, accompanying either the "weed" fever, or the milk fever, more especially when perspiration was unduly forced in the former. Other more serious complaints may present the miliary eruption as a complication; but it often occurs alone. It commences with chilliness, and, like most irruptive fevers, with sickness, languor, frequent pulse, and heat of skin. At times, it is attended with syncope. Itching as well as a sense of pricking, or formication, on the surface, and sometimes of the extremities, has been usual in this disorder. The febrile symptoms often continue five or six days before the eruption appears. A feeling of oppressive weight about the thorax is a very usual symptom. The spirits are depressed, and profuse perspiration, having a sour smell, is generally perceived. Some marks of a degree of determination to the head are not infrequently noticed:

such as dull, watery, or inflamed eyes, and noise in the ears. Aphthæ have sometimes been discovered in the throat in miliary fever. The lochial discharge undergoes either diminution or suppression during its continuance; and, previously to the eruption coming out, there is a rough feel of the skin, such as that which is termed *cutis anserina*. It is not uncommon for the tongue to be foul, and red at the edges. The eruption, though sometimes white, commonly consists of numerous small red pustules, like millet-seeds, and perceptibly prominent to the touch. Before many hours, they show, at their summits, small vesicles, containing a liquid at first straw-coloured, and subsequently becoming either yellow or white. Scabs are formed thereon, in two or three days, which go away in scales. The pustules are sometimes in clusters, but more commonly distinct. They first appear on the forehead, neck and breast, and afterwards invade the trunk and extremities, but seldom spread over the face generally. The pustules may come out in successive crops. Two varieties of those pustules are chiefly remarked, namely the red and the white, and the latter are indicative of a severer disease than the former. The complaint is considered to be either idiopathic, or symptomatic, according as it appears alone, or is attendant upon other disorders; but the treatment is, in either case, to be conducted on the same general principles of combating the fever. Too much heat is to be discouraged, and we should aim rather at the promotion of coolness in the bed-chamber, and the removal of some of the bed-clothes where the latter are in too great quantity. Laxatives are to be given, and a moderate share of mild diluents, but without by any means forcing perspiration. The diet should be light and nutritious, for the strength requires to be supported in this complaint. Indeed, the infusion of cinchona with sulphuric acid is proper in this disorder, and other unirritating tonics. The linen is to be frequently changed. There are prac-

tioners who have an apprehension of the miliary eruption prematurely receding, and who advise blisters, musk and cordials, to correct the bad effects of such an occurrence ; but by duly supporting the strength with tonics, and otherwise, we shall best guard against any such consequences.

INTESTINAL FEVER.

306. An intestinal fever has also been treated of by obstetrical writers, as liable to attack women in the puerperal state whose bowels have been neglected, or whose diet has been injudicious during utero-gestation, or after delivery. Within eight or nine days subsequent to parturition this complaint is most likely to show itself. It attacks with chilliness, oppressive sensation at the stomach, and loathing of food. The pulse is very frequent, and, while the patient complains of being very cold, her skin appears hot to the touch of another person, except at the feet. But she afterwards becomes sensible of considerable heat in the hands and feet ; her appetite goes away ; she complains of thirst ; her tongue is slimy and white ; she is very sick ; is flatulent ; and occasionally vomits bilious or phlegm-like matter. Her sleep is disturbed and unrefreshing, and she is apt to talk or mutter during her imperfect slumbers. She sometimes complains of a throbbing or confused pain of the head, afterwards becoming more severe. Whatever pain she experiences in the bowels is rather spasmodic or griping, than of a fixed character. The state of the alvine dejections is not uniform. Sometimes there is costiveness, at other times the dejections are fœtid and dark-coloured. The operation of laxatives in this complaint is remarkably powerful. But the lochial discharge, and the secretion of milk may remain uninterrupted. The eye and countenance are not much altered in the intestinal fever from their natural appearance. Sometimes the abdomen be-

comes enlarged in this complaint, and is soft as well as full, which appearance it may retain even after recovery. Nervous symptoms, such as palpitations, starting, &c., may be superadded to the foregoing, and even the uterus and the bladder may afterwards exhibit signs of their becoming more or less implicated in the disease. Thus, pain and subsequent tumefaction may occur in the hypogastrium, and the passing of either urine or fæces may be attended with pain. The duration of this fever varies from a few days to a fortnight.

307. The mode of treatment which Dr. Burns recommends for the puerperal intestinal fever is, in the first place, to give so much ipecacuanha as will operate as a very gentle emetic, and, as soon as the emetic operation has ceased, to exhibit small saline draughts, and diluents in the form of tepid drinks, so as to determine to the surface. After a few hours, fæcal evacuations are to be procured, either by means of a dose of rhubarb and magnesia, or castor oil, or calomel to remove offensive matter from bowels. After this, if griping and much tendency to purging be experienced, an anodyne enema is to be administered every night until the bowels become less irritable; but we are also to take care, if they grow costive, or if the dejections be fœtid, to exhibit gentle laxatives occasionally: for offensive matter of any kind is not to be allowed to accumulate in the intestinal canal. The diet is to consist of beef-tea, calves-feet jelly, arrow-root, &c., and, where there is no diarrhœa, ripe fruit may be given. Ginger-wine diluted with water has been recommended as a very excellent beverage. A moderate quantity of Madeira wine and water will be useful as the disorder declines, but must not be taken to such an extent as to excite. In nervous irritation, the solution of camphor may prove serviceable. Milk dissolves much more camphor, than water does.

CHAPTER XXI.

RETROVERSION OF THE UTERUS.

308. This is a malady of early pregnancy, which is liable to occur from the 3d to the 5th month of utero-gestation.* It necessarily calls for the assistance of the practitioner, the symptoms being very urgent and distressing. A very frequent cause of retroversion (says Dr. Denman) is the neglect of the female to evacuate the bladder until it acquires such a degree of distention as to rise up in the uterine region, and tilt over the gravid uterus, which, having the fœtus in general situated near its fundus, this part is the heaviest, and falls backwards, leaving the organ in almost a doubled state, so that there is a pressure in the cavity of the pelvis, both on the rectum and the bladder. Thus the evacuation of urine becomes obstructed, and that of the fœces is likewise materially interfered with. Retroversion may either be complete, or incomplete. When complete, it often excites bearing-down pains nearly equal to those of labour; the distention of the bladder also occasions very great distress. The lower part of the hypogastrium may, in consequence, become both swollen and tender. A small quantity of the urine may at first dribble away, by straining; but the retention is liable ultimately to become complete. The loins may be very painful; nor is tenesmus an unusual symptom. Even the rectum may be inverted through this complaint, and a prolapsus of the vagina take place. To such an almost incredible extent has the distention of the bladder sometimes proceeded, that fourteen pints of water are said to have been drawn off at a time. In making a vaginal examination in this complaint, we sometimes find it difficult to introduce the finger, owing to the back

* Much oftener in the 3rd or 4th, than in the 5th.

part of the vagina being pressed forward. If we succeed in reaching the superior part of the canal, the os uteri cannot be felt—so much upwards and forwards is it directed; whilst the fundus uteri is thrown backwards and downwards. There is occasionally some difficulty in the diagnosis between retroversio uteri and extra uterine pregnancy; but this is of little consequence, inasmuch as in either case the evacuation of the bladder and the procuring alvine dejections are the most important objects the practitioner can have in view. Where retroversion takes place slowly, the diagnosis will be the more difficult; but where it occurs quickly, there can be no doubt as to the nature of the case. A large tumour of the ovaria may be attended with effects very much alike to those of retroversion of the uterus. When we say that neglect to evacuate the bladder in the early months of pregnancy, until a large quantity of urine have collected in it, is a frequent cause of this accident, we do not purpose to deny what Dr. Burns asserts, namely, that the distended bladder merely places the uterus in such a position as enables the abdominal muscles to press down the viscera, like a compress, upon the fundus, which the expanded bladder had inclined backwards. This, very probably, is all very correct as to the *modus operandi*, in the first instance; but in a prophylactic sense, it is vastly more useful to view the accumulation of the urine as the cause, than the abdominal contraction, as it not only excites that action of the muscles, but also enables the pressure to apply with effect. But we have remarked that retroversion may take place slowly and gradually. Dr. Burns has written a great deal to explain how this may happen, more especially in very capacious pelvises. He remarks that the uterus in an unimpregnated state, and likewise in the early stage of pregnancy, is not in a perpendicular position, but lies obliquely, sometimes almost horizontally, in the bottom of the pelvis. The rectum, being frequently curved and inclined to one side in

the hollow of the sacrum, may, if relaxed, and partially loaded with fæces, present an obstacle to the fundus uteri, and thus prevent it from changing its position; and this obstacle may continue after impregnation. The folds of the peritonæum, which the uterus sends off the sides of the rectum, and which form a kind of cul-de-sac, may, by the pressure of the fundus uteri, be converted into a sort of pouch, embracing the fundus, and retaining it in situ. The bearing-down pains show that the abdominal muscles are at work, and, if they firmly press down a portion of the viscera upon the fundus, there certainly is a sufficient agency to complete the retroversion, and to maintain it also. Thus pressure would be made against the bladder, and retention of urine be caused, and likewise, the pressure of the fundus against the rectum will interfere with the evacuation of the fæces. As the impregnated uterus increases in size, the obstruction will of course increase with it, until it shall have become complete, and the symptoms be no longer endurable. The cervix uteri is curved over, and presses on the bladder. Sometimes the os uteri, in its inverted position, is carried above the arch of the pubis, pressing upon the part of the bladder that is superior to the pubis. Thus, the bladder is as it were divided into two chambers or cavities, so that the urine is prevented from flowing from the upper chamber into the lower one. Hence, if a catheter be introduced into the inferior division alone, this cavity only will be emptied, and very partial relief be given thereby, while the superior part still remains distended. The distortion of the bladder and urethra, thus occasioned, renders it sometimes a very critical and difficult matter to introduce the catheter completely into the upper division of the urinary organ, so as to draw off the water entirely. If we attempt to do so by force, we run a risk of perforating not only the bladder, but the uterus. In order, therefore, to effect our purpose we must pass the finger into the vagina, and

make this serve as a director and assistance in insinuating the catheter into the upper chamber of the bladder. The kind of catheter generally preferred for the operation is a male metallic catheter with a very moderate curve, the female instrument being scarcely long enough for the purpose. Sometimes a flexible catheter is used but it may be too yielding, although less calculated to inflict injury. At times, we shall find the most convenient manner of introducing the instrument to be to direct its concavity towards the inferior surface of the pubis; that is, when the bladder turns, from behind forwards, over the front of the pelvis, a point easily determined on examination. But if we should discover that the lower part of the bladder bends backwards, over the os uteri, we must then turn the concavity of the catheter towards the sacrum. Patience with a little dexterity will, perhaps invariably, overcome every difficulty in the operation. The operator, however, will have to press upon the upper division of the bladder, with his hand placed upon the hypogastric region, both to ascertain the state of the organ as to distention, and also to assist in evacuating it. This should be done completely, inasmuch as it is the most essential measure in the treatment of retroversio uteri. Neither should the rectum be overlooked, for the faecal matter which it contains must be got away by means of injections and such medicines as will convert the visceral secretions into a semi-fluid mass. The elastic tube, recommended by Dr. O'Beirne in diseases of the lower intestines, may be found of utility here. Dr. Burns assures us, that the uterus will be likely to right itself in twenty-four or forty-eight hours after we have evacuated the bladder and rectum, and that any other manual operation to place the womb in a favourable position will probably, be unnecessary. But others are not so sanguine in this expectation, and think that the practitioner ought to interfere still more, in order to rectify the mal-position. If the attempt be

determined upon, we must place the patient on her knees, and elbows, thus elevating the pelvis. Two fingers are then to be introduced into the rectum, which ought previously to have been cleared out as much as possible by means of enemata and lavements. We are to press the tumour formed by the inverted uterus, slowly and gently, either directly or obliquely upwards, as we shall find best calculated to promote its mobility. A finger of the other hand, in the vagina, may co-operate with those in the rectum, by gently turning down the os uteri. Force is altogether inadmissable in this operation, and may bring on convulsions, or even swelling and inflammation. When therefore, we consider the operation called for, which Dr. Burns seems to think it seldom or never is, time, patience, and gentleness must be put into requisition on our part. An opiated enema will contribute to tranquillize the patient and the uterine parts, and sometimes, where any inflammatory symptoms prevail, or are apprehended from the irritation of the retroversion, it may be proper to take away a little blood before our proceeding to the operation. Dr. Burns quotes from various authors, to show that frights, falls, &c., have been followed by retroversion of the uterus; and that is very possible; but Dr. Denman appears to conclude that the accident is entirely owing to distension of the bladder. He says that the uterus must be elevated before it can be retroverted, and adds that there appears to be no cause, besides the distension of the bladder, capable of elevating the uterus, and at the same time projecting the fundus backward. However, the difference of opinion between those eminent authorities is not of any practical importance; for Dr Burns acknowledges the agency of the bladder as a predisposing cause; and when the fundus uteri has been enlarged through disease, and not by impregnation, the same reasoning holds good. At all events, it is a well-established maxim in practice, that, in all cases of retroversion of the uterus, we are never to cease our

attentions to the evacuation of the bladder and rectum, until these organs can act independently. By such means only can we obviate danger, and, thus, pregnancy will generally be permitted to proceed, though there is often a trifling flow of blood after the uterus has acquired its proper position. It has been said, however, that partial mal-position, affecting the situation of the os uteri, and interfering in some degree with the facility of parturition, has been known to continue to the end of pregnancy. This we believe to be of very rare occurrence. Sometimes the tumour produced by the retroverted uterus gets considerably forward in the vagina, and seems to induce a protrusion of the latter.*

* Surgeon Charles Halpin, of Cavan, read at the last January meeting of the Dublin Obstetrical Society, and subsequently published in the *Dublin Journal of Medical Science*, an interesting Paper on the Retroversion of the Uterus. In this valuable Paper, Mr. Halpin proposed a novel plan for relieving this calamity, which he adopted with perfect success in a case of much peril wherein the ordinary painful and loathsome methods of reduction were tried without avail. We should describe the operation and the apparatus used nearly in the precise words employed by Mr. Halpin :—After narrating his failure to replace the uterus by following the directions given for that purpose in systematic works on Midwifery, our authority says—“ It instantly occurred to me, that *with the assistance of a bladder I should be able to inflate the pelvis, and thus raise the con-terus into the abdomen.* I attached a small recent bladder to the tube of a stomach pump, with an air tight piston, and having immersed it a few moments in warm water, to bring it to the heat of the body, I introduced it, empty, into the vagina, between the fundus of the [retroverted] uterus and the rectum. Retaining it in the vagina by holding my hands firmly across its orifice, Dr. F. [who assisted him] inflated it slowly and steadily. After a time she complained of a sense of tension or bursting, but no pain. We then ceased throwing air into the bladder, allowing what was in already to remain, keeping up, as it did, a steady, equal, well directed pressure on the tumour. After the expiration of five minutes we threw more air into the bladder, when the patient exclaimed slowly, “ Oh, now you are forcing

309. A far more rare mal-position of the uterus, namely, an antiversion, sometimes takes place. In this mal-position, the fundus uteri is thrown forward, so as to press upon the neck of the bladder. We cannot satisfactorily assign a cause for this antiversion; but the symptoms are easily described: they are, first, desire but inability to make water; secondly, weight in the lower part of the abdomen; thirdly, tremour felt near the pubis, and the os uteri turned toward the sacrum; fourthly, bearing-down pains, and more or less difficulty in passing fæces. In this, as in the former case, the first thing we

something up to my stomach!" I retained the bladder some time longer in its situation; and then, previous to withdrawing it, permitting the escape of some air, I introduced my finger, and had the satisfaction of finding that the tumour was no longer in the pelvis, and that the os uteri lay within reach of my finger, pointed downwards and backwards. I then, and not till then, removed the apparatus."

Mr. Halpin speaks of a substitute for a pessary, afterwards, which it will be proper to notice: he says, "I would introduce as a pessary, a gum-elastic bag constructed on this [we suppose he means, as the bladder] principle, and inflate it to a proper state of distention. It will remain without producing the least annoyance to the patient; and cannot, from its nature, obstruct the free passage of either urine or fæces; whilst it will render the descent of the uterus within the pelvis a matter of impossibility. This pessary will be found useful in other affections of the uterus and its appendages."

We regret that our limits and the state of our arrangements when Mr. Halpin's published Paper reached us would not permit of our giving the interesting and well-reported case at full length, and would recommend our readers to consult it in the periodical from which we have made the foregoing extract. Mr. Halpin deserves well of the profession for bringing so ingenious and valuable a resource before them in a very intricate and perplexing malady; and the author of the *Accoucheur's Vademecum* had the pleasure of being present when the paper adverted to was first read.

Mr. Halpin remarks that water may be injected into the bladder instead of air, with the effect of making its pressure irresistible.

ought to do is to draw off the urine with a catheter; we should then raise up the fundus uteri, and, to prevent its subsequent displacement, we are recommended to place a compress above the pubis, and also to employ astringent injections in the vagina.

CHAPTER XXII.

CEREBRAL AND SPINAL AFFECTIONS OF NEW-BORN INFANTS.

310. Sometimes the infant is so seriously affected by disease of some part of the nervous centre, soon after birth, that it necessarily comes under the observation of the obstetrician. Dr. Evory Kennedy has published several cases of this kind which came under his inspection. The symptoms are by no means so obscure as a person might be disposed to expect in an infant; and, although efforts to rescue the babe from his impending fate so often prove fruitless, we shall have sufficient instances of successful treatment to encourage our exertions. Where primary or simple apoplexy occurred, on the sixth day after birth, Dr. Kennedy noted the symptoms as follow:—The child refused the breast, and suddenly fell into a state of stupor, with laborious, stertorous breathing. The pulse fell to sixty; the face became tumid and livid; the bowels, &c., however, were perfectly natural. The curative means pursued, and successfully with this infant, were applying one leech over the fontanelle, and another at the lower part of the occiput.

The spine was rubbed with the volatile liniment, and the baby immersed in a warm-bath, while the head was kept cool. The respiration became natural, and the pulse rose to 120 shortly after the leeches dropt off. Subsequently, the child was supplied with breast-milk and a small quantity of wine-whey through the day, but was obliged to be fed for some time, from its inability to draw the nipple. It had recovered completely by the 16th day.

311. In another case, a child had a tumour on the occiput, from long-continued pressure during labour, became insensible a few hours after its birth, and had the muscles of the neck and lower extremities so spastically fixed, as to produce complete opisthotonos. In this infant the meconium had been freely evacuated by castor oil; a leech was applied to the fontanelle, and two to the spine. The warm bath also was used; the spine was rubbed with the volatile liniment, small and repeated doses of calomel were administered, as well as a turpentine injection. The child recovered.

312. In another case, there was paralysis of the seventh pair of nerves. This child, also, had endured considerable pressure in parturition, and had a tumour on the scalp, together with a sloughing spot on the left parietal bone. The day after its birth, the countenance was observed to be remarkably altered. The angle of the mouth was slightly drawn to the right side; the ala nasa of the right side was much more expanded than that of the left, and gave the nose a deformed appearance. The left eye remained open, both in crying and sleeping, though the right eye was closed. No measures are detailed as having been taken with this child, which was in other respects healthy, and was removed from the hospital in this state. In a case, however, where the child was born in a very feeble condition, and had a sort of convulsive respiration, established after stimulation, &c.; and where there were some

scars on the cranial integuments ; the respiration continued for some time laborious, the left side of the face became tumid, the right eye remained constantly open and insensible to light. An aperient was administered, which operated, and some whey was also given. In the evening, the muscles of the left side of the face and body were thrown into convulsions ; the muscles of the arm and head were those which were most remarkably affected, and the entire of the right side remained quite tranquil. A bath and afterwards an enema were administered. The entire of the second day the infant continued in a state of coma, with occasional convulsive paroxysms brought on by touching or disturbing him, though not very violent. His bowels were regular, but he experienced some difficulty in swallowing. The third day, he was much the same, the heart's action was laboured and 120 ; his respiration 40. A leech was applied to his neck, and some wine-whey given. On the fourth day, he appeared to have been improved by the leeching, and, towards the evening, opened his left eye for the first time. The expression of his countenance became more natural, the left side of his face less swollen ; he also drank more frequently. Still, however, there was some tendency, though a diminished one, to convulsive motions of the left side. His pulse was 120 ; his bowels were free ; he could not suck, but got wine-whey. A leech was then applied, and he slept quietly after it. His eyes were subsequently discovered to be turned upwards, and the pulse had sunk to 114, and was feeble. The fifth, sixth, seventh, and eighth days, the child showed some slight improvement, when the mother left the hospital. In a few days afterwards the child was seen again, and was obtaining more power of the right side. A few slight convulsive twitches, however, had still been experienced by him. Several other instances occurred of similar affections ; some proved fatal, and some were successfully treated in the

manner above described. Where a cautious application of leeches was omitted, the result was usually unfavourable; but to carry the system of depletion to any extent with new-born infants was always found to be inadmissible. Leeching, therefore, the warm bath, (keeping the head cool), frictions on the spine with the volatile liniment, promoting the secretions with calomel, castor-oil, and injections, and supporting the system with a little wine-whey in addition to breast-milk, appeared to constitute the basis of successful treatment in those disorders.

MENSTRUATION.

315. Although the plan of this work does not lead us to discuss generally the diseases peculiar to females, its chief design being to give practical information in matters more or less connected with the puerperal state, still it appears proper, as it is according to custom in books of midwifery, not to pass over the subject of menstruation without remark. The discharge of the menstrual fluid, or catamenia,* periodically, seems generally to be indispensable to the maintenance of a healthy state of the uterus and a fitness in the organ to fulfil the functions of procreation. We say "generally," for it has been said that a few rare instances have occurred of women bearing children who had never menstruated. Of the truth of this, we must confess, we have some doubt, though we have known women to become mothers who, habitually, had menstruated so very scantily that the secretion was barely perceptible; and it is possible that those who have been supposed not to menstruate at all, had some periodical secretion from the uterus which was overlooked from being of a pale colour, but which, nevertheless, was sufficient to answer the purposes of the uterine economy. There has been much difference of opinion with regard to the precise nature of the menstrual fluid. Some persons

* Derivation,—*κατα*, according to; and *μην*, a month.

have called it "blood;" but it certainly wants some of the properties of ordinary blood, and, consequently, cannot correctly be so denominated. The menstrual fluid does not coagulate, as genuine blood always does unless under the influence of some morbid cause. Neither has the catamenial fluid that disposition to putrefy, when extravasated or retained in the genital passages, which blood so manifestly has. In some cases, such as those of the hymen forming a continuous membrane without any aperture, or where complete occlusion of the vagina has occurred, and where the menstrual fluid had been pent-up in the superior part of the vagina for a considerable time, and in large quantities, it seemed not only free from coagulation, but also unaffected by putridity. The change it had undergone appeared to be some degree of thickening, doubtless from the absorption of some of its aqueous particles. Blood, therefore, it is not; but a secretion *sui generis*. The opinion that now seems most generally to prevail is, that the menstrual fluid consists of the colouring particles of the blood dissolved in its serum, but without fibrine. Why this secretion should be so indispensable to the vigorous condition of the uterus it may be difficult to determine, and various and unprofitable are the conjectures to which the question has given rise. However, when we observe the nature of the uterine vascular system, and perceive how much it becomes increased in development during utero-gestation, and how very tortuous its vessels appear; and also see that during menstruation the uterine vessels have in a degree, a similar appearance, as is evident from post-mortem examinations of women who have died at the period of the menstrual flux, it is only reasonable to imagine that nature has ordained this periodical increase of vascularity, and its consequent secretion, to keep the vessels of the organ pervious, and fit to perform the functions of pregnancy whenever excited thereto by the proper stimulus; and that they thus relieve

the plethoric state of those parts, at the same time that they keep up an habitude for the procreative function by this periodical action.

314. The time or period of life at which menstruation commences is not uniformly the same in all countries, nor in all females in the same country. It is evidently greatly influenced by climate, as well as by peculiarity of constitution, and, no doubt, also, to a certain extent by habit of living. It takes place at the period of puberty: in warm climates this occurs at a very early age, in some climates so early as the tenth year. This is said to be the case in Greece, India, and other genial climates. On the contrary, in cold climates, as in Lapland, women are stated not to menstruate before their twentieth year. In the British Isles, from the thirteenth to the eighteenth year may be assigned as the epoch of menstruation, but the fourteenth or the fifteenth year we believe to be the most usual period. The time that this periodical secretion continues has been said to be about thirty years. So that women commencing to menstruate at an early age commonly cease to do so at a proportionably early period, and *vice versa*. In our climate, therefore, menstruation usually ceases between forty and fifty—forty-five being, perhaps, the most general time. But I have known instances of women bearing children, and I conclude, therefore, that they continued to menstruate, after they had put over half a century of their lives in this country. And I knew an instance of one woman, of a sound habit of body, who bore a healthy infant before she reached her thirteenth year, having been married at about twelve years of age! But these are very extraordinary cases in this climate. In New South Wales, however, it is by no means uncommon to behold women, who had evidently passed the period of child-bearing according to British calculation, become pregnant shortly after their arrival in Australia.

315. In some females there is no distress or troublesome symptom on the catamenia making their first appearance; but others suffer rather severely at that time, and seem to accomplish the secretion with the greatest difficulty, and with much constitutional disturbance. Where menstruation does not take place at the time when we have a right to expect it, especially where there are symptoms from which we have reason to infer that there is an ineffectual constitutional effort to produce it, we call it a case of obstruction, or retention of the menses. Where the menses had appeared, but fail to come at the accustomed period, it is named a case of suppression. Women, in general, menstruate once in every lunar month; with some females the discharge returns with the greatest regularity, even to the very hour. Others, however, are by no means so regular, not being able to count with confidence as to the precise day, or within several days, on the appearance of the menstrual flux. Some, again, menstruate every three weeks, while with others an interval of five weeks may interpose between the periods. And all those varieties may be without any interruption of the ordinary health. The most usual length of time for the continuance of the catamenia is, perhaps, three or four days. But some females have a far more protracted flow of the menses, the discharge continuing for many days, and this without exhibiting any thing that could be called a morbid character. In general, where the catamenia continue for barely three days, which we believe to be most frequently the case, the discharge is most copious on the second day, and in much smaller quantity on the first and last days. The quantity of fluid discharged varies, likewise, very considerably in several females. Perhaps from six to eight ounces may be the ordinary quantity secreted at each period; but sometimes it is considerably less, and sometimes, habitually, very much more. It is by no means the case that the strongest and

most robust women menstruate the most copiously ; for sometimes we find a pale, delicate young lady have a vastly more profuse discharge of the catamenia, than an athletic milk-maid who is the very picture of health and overflowing vigour.

316. When the menses are obstructed, or retained, that is, do not appear at the time we should expect them, the necessity for medical interference is to be inferred from the constitutional symptoms attendant upon the retention ; and the measures we should pursue are always to be adapted to those symptoms, as well as to the habit of body of the individual ; for the idea of empirical treatment by means of what are called enemagogues is no longer countenanced by judicious practitioners. Sometimes the nonappearance of the catamenia is accompanied by a certain peculiar state of the system, called chlorosis, or chloriasis. This is a complaint of by no means uncommon occurrence among young females delicately brought up, as well the children of operatives in crowded manufacturing districts ; and it certainly is indicative of constitutional debility. The colour of the skin in chlorosis is that which gives the name to the disorder, which, in common parlance, is called the "green sickness." It is easily distinguished from almost every other disorder by the very characteristic hue which it occasions, and can only be mistaken, perhaps, for *heptalgia*, a complaint to which sedentary young women are subject, or for jaundice. The former, however, is of more transparent paleness, and wants the greenish hue of chlorosis, as well as several of its symptoms, though agreeing with it in an apparent deficiency of the red particles of the blood, and in possessing too small a proportion of that circulating fluid ; while jaundice has not only a more decided tinge of yellow, for the most part, but also more urgent hepatic symptoms than has chlorosis. The tinge of chlorosis, however, may be nearly as decidedly pale as that of *heptalgia*, and without that greenish hue as demonstrative of it : it may be of the

cadaverous paleness of anæmia. The other symptoms generally observed are, debility, dulness and torpor of the entire frame, weakness of the muscular system, with listlessness of mind, and childish caprice. The eye is frequently dull, and the sclerotic membrane partakes of the universal paleness. The lips are blanched, and so also is the tongue in a degree, and the latter is apparently diminished in size, though commonly moist. The surface of the skin, and particularly of the extremities, will usually be cold. The pulse is weak, and sometimes, but not uniformly, quick. A little excitement, however, easily throws it into an unsteady, fluttering state, and also produces palpitation. The sleep is disturbed and unrefreshing. The appetite is either impaired, or has a morbid taste for strange, and sometimes for disgusting trash. Chlorotic patients often shew a great propensity to eating chalk, magnesia, cinders, or almost any stuff of the kind they can lay their hands upon. The bowels are deranged, sometimes producing dark-coloured and offensive dejections, at other times being very costive. The abdomen has a tendency to become tumid, and sometimes to a considerable extent. Swelling of the hands and feet is apt to occur at night, and the eye-lids, if not the entire face, may have a swollen appearance in the morning. The secretion of urine is generally diminished, but not turbid. As may well be expected, a decay both of flesh and of bodily strength, as well as of spirits, takes place under such a general derangement of the animal functions; and to all this may be superadded headache, giddiness, and even acute pains. The breathing is more or less affected, and there may even be hysterical symptoms. There may also be a cough, raising apprehensions of consumption having set in; but when the patient can draw a full inspiration, and inflate the lungs without pain, we may rest satisfied that this awful foe of the human race has not as yet invaded the young sufferer. Bad

cases of chlorosis, however, have been known to terminate either in consumption or dropsy. Yet the complaint in general gives way to judicious treatment, and sometimes goes off, of itself.

317. When this species of amenorrhœa comes before the practitioner, his measures must be directed chiefly to supporting the strength and restoring the normal state of the animal functions. And the improvement of the digestive organs, so manifestly deranged, and of the alvine and other secretions, will be a primary object. This is not to be accomplished by the mere force of stimulants, whether of the emenagogue kind, or other, but by prudently inquiring into, and soliciting by suitable medicines, the action of the secretory and excretory organs. When the general system has been put to rights, and the vital powers are restored to energy, the uterine functions will participate in the general improvement, without the aid of specifics, which, in the shape of emenagogues, must not be had recourse to while the entire economy labours under such derangement as we have described. As the stomach is in a perceptible state of disorder, as evinced by the morbid taste for improper substances, the exhibition of gentle emetics, such as small doses of ipecacuanha, &c., has been considered highly proper in the first instance. This not only serves to remove morbid secretions from the gastric organ, but also stimulates the languid action of the system in general, and determines to the surface. But this emetic action must be kept within due bounds, and with strict attention to the patient's strength. The bowels must also be awakened into energy by laxatives. The functions of the skin ought to be promoted by the use of the warm bath, every day, or every second day; together with frictions of the flesh-brush or flannel; and the clothing should be warm, flannel being worn next the skin. The diet must be light and nourishing, and, as soon as the frame is able to

bear exercise it ought to be taken, but not to such an extent as to cause fatigue. A small quantity of wine may be taken; but every article of diet found to disagree with the stomach must be carefully refrained from; and in this complaint there often is a considerable tendency to flatulence, so that all food promotive thereof must be prohibited. Mild tonics will be proper after the stomach and bowels have been duly attended to in the manner advised. The preparations of iron are found to be very efficacious in chlorosis, and chalybeate waters are much to be commended in it. The muriated tincture of iron (*Tinctura ferri sesquichloridi* of the last London Pharmacopœia) is a useful medicine, and so is the carbonate of iron in combination with myrrh, or with sulphate of quinine. Dr. Burns recommends the bowels to be kept free by the use of the aloetic pill, the compound tincture of senna, or the compound tincture of rhubarb or of aloes. He also praises a combination of one grain of sulphate of iron with five grains of the *pilulæ aloës cum myrrha*, and we believe it to be a useful medicine. But the author has often prescribed the following pills with very marked advantage:—

R: G. Assafœtidæ, et
 Myrrhæ, āā ℥ss;
 Ferri sulphatis, ℥j;
 Caryophyllorum pulveris, ℥j;
 Pulveris capsici, gr. xxvj;
 Bals. Canad. q. s. ut fiant pilulas 66,
 quarum sumat binas vel tres pro dos.

These pills will be more particularly serviceable when the appetite is dull, and where symptoms of a nervous or hysterical character show themselves; but, though they often suffice for the regulation of the bowels, they are not altogether so aperient as some of the preparations mentioned above; but when the intestinal canal has been brought into a proper condition, they

will seldom fail to keep it regular in its functions. Once or twice a day is as often as the dose need be repeated. Whenever aperients become necessary in chlorosis, they must be given in small quantities, and their operation, when they are exhibited at night, may next morning be promoted by means of a lavement of warm water. The warm bath is much more to be recommended than the cold one in chlorosis, until the patient can bear the latter without experiencing chilliness after it, that is to say, towards convalescence.

318. When the menstrual secretion first occurs, it is almost always of a pale colour, but afterwards gradually becomes sanguineous. It may make its appearance, and then discontinue for some time, taking place very irregularly until it become fully established. In some females its first accession is, as we intimated, accompanied with constitutional derangement, and pains of those parts, as of the back, &c., which are sympathetically affected in labour and other uterine excitements. It is scarcely necessary to remark that menstruation is interrupted by pregnancy, and also by lactation. It has been asserted indeed, that a few pregnant women have been known to menstruate. Of this, however, there is considerable doubt; and, when we consider the change which takes place in the gravid uterus, and the continuous membrane which lines its cavity, as well as the sort of plug which seals up the os uteri, as described in the article on bringing on premature labour [152], it is far more easy to believe that some really sanguineous effusion, or hæmorrhage, from the vagina* had been mistaken for the menstrual fluid, than that an actual secretion had passed from the uterus itself. Some women always experience more or less disturbance of the system at the periods of menstruation; and most females are cautious and somewhat anxious at those times.

* The author witnessed a decided hæmorrhage from the vagina in a nurse. It was owing to the irritation of gonorrhœa.

With others, however, as before stated, the secretion passes off without causing any solicitude or annoyance worth speaking of. There are cases, too, in which the occurrence of the catamenia is very irregular; but it is commonly either at the first time of the appearance of the menstrual flux, or at a short period before it is about to discontinue finally, that this marked irregularity occurs. The final cessation of the menses is generally preceded by such irregularity. Instead of the discharge continuing for only three or four days, as was previously habitual, it may be prolonged for ten days or a fortnight, and afterwards be interrupted for a couple of months. Or it may come on once a fortnight, and then profusely. It is said that women are more likely to become pregnant some short time after menstruation than at any other time. It has also been said that just when the secretion is about to take place the female is very susceptible of impregnation.

319. With regard to obstructed menstruation happening to females of a plethoric temperament, and with symptoms of constitutional excitement, instead of those of debility which we have already noticed, we must pursue a different course with such patients. Where the complexion is florid, and other marks of plethora are present, the system may exhibit very distressing symptoms. There may be a dull, oppressive headache, giddiness, palpitations, those sudden spasmodic pains, called "stitches," and a full pulse. We need scarcely hesitate to have recourse to a moderate venesection in such a case, and then we must free the bowels, keeping them afterwards open by means of laxatives. The aloetic pill at night with a mild saline aperient in the morning will be suitable. Blisters have been recommended by some practitioners in such a case after blood-letting, and where any fixed pain is complained of. Aperient and diuretic mineral waters are generally appropriate and beneficial. When the symptoms of excitement, or appre-

hension have subsided, a light and moderate diet, together with suitable exercise having been observed, bitters may be taken. Where the health evinces no sign of derangement, and the menses still continue obstructed, some of those medicines called emenagogues may be tried. These are numerous, and we shall by and by notice some of them.

320. As to suppression of the menses after they have once been established, this may arise from various causes. Most commonly it is to be attributed to cold, more especially to wet feet about the time of menstruation. The suppression in such case, will usually be attended with more or less fever. Pain in the head, back, loins, and limbs, with some febrile symptoms, will generally appear. A little blood ought to be taken away, and the bowels should be freed with a moderate dose of rhubarb. Saline draughts, with the addition of as much antimonial wine, or solution of tartarized antimony, as will induce slight nausea, should then be given, or a little wine of ipecacuanha and five or six drops of tincture of opium every six hours. Speedy recourse to the warm bath will sometimes answer the desired purpose, and can never, if used in a prudent degree here, do harm. Where this is not to be conveniently had, either a warm hip-bath, or sitting over a large tub of hot water in which a stool has been placed, and with a blanket drawn close around the patient, will be attended with a nearly similar effect. After this she should be wiped dry, and transferred to a well warmed bed, and indulge in whey or other mild tepid drinks in moderation. If those measures have been early pursued, after the cause of suppression, the interruption will probably cease, if not at once, at least in a short time. But if they be neglected, the suppression is then likely to become a chronic case.

321. Chronic suppression of the menses may either be attended with symptoms of plethora, or with those of debility; and the former may degenerate into the latter. Where we have

symptoms of plethora present, with a full, strong, and frequent pulse, moderate venesection ought to be performed, and this particularly when the skin is hot, when thirst prevails, and the head, back and loins are affected with pains. If we do not promptly check this rapid and decided action of the pulse, it will soon bring on weakness, when the indications will become different. There are practitioners partial to bleeding from the foot in such a case as this, by opening the vein and putting the foot into warm water; but we cannot perceive any great advantage from this inconvenient method, over bleeding from the arm, while we are always in uncertainty as to the quantity of blood thus taken away. After blood-letting, we should prescribe purgatives, and, on alternate days with the purgatives, we shall find it serviceable to give saline draughts. It is not often that chronic suppression of the menses with plethora resists this treatment.

322. But even without the 'exciting cause of taking cold, a plethoric state of the system may interfere with the menstrual secretion, as we have before intimated. It must be our study, on the occurrence of such a case, to remove the plethora, by restricting the diet, employing chiefly such a one as is cooling and non-stimulant, viz., vegetable diet with fruits, refrigerant beverages, &c, and the regular use of laxatives; air and exercise. Should the pulse and general indications of the system point out the propriety of blood-letting, this may occasionally be adopted; but it is far preferable to correct habitual plethora by the other means stated; than to get into the practice of bleeding young women. It is not, however, until we have brought the patient to a more temperate condition of the system that we can safely venture upon the exhibition of emenagogues. But it must not be forgotten that a state of weakness, short of that which we have described in chlorosis, may be the cause of suppression of the menses, as well as plethora. This weakness

may be principally dependent on a disordered condition of the stomach and other digestive organs; and in all cases these are to be improved where weakness prevails, as dyspepsia is incompatible with vigour of the general system. If there be any indications of foulness of the stomach, five grains of ipecacuanha may be given every half-hour, until a gentle emetic effect shall have been produced. In the administration of tonic medicines for improving the tone of the stomach, we must cautiously begin with small doses, in proportion to the debility of the organ; for, as Dr. Mason Good, has judiciously observed, “It is an error to suppose that the stronger a medicine of this kind is, the more efficacious it must be.” On the contrary, we should commence with a very moderate quantity, such as a drachm of some bitter tincture to an ounce and a half of some mint-water, or an ounce of some bitter infusion as a substitute for the tincture. To aid the sluggish functions of the stomach, a dinner-pill may be advantageously taken, composed of a couple of grains of powdered rhubarb and a grain of capsium, made up with some of the extract of chamomile, with or without half a grain of the extract of aloes. This will be found to answer the purpose, as will, likewise, one or two of the pills we have recommended in chlorosis taken a little before the meal. The occasional use of six drachms of the compound decoction of aloës in four drachms of *distilled* cinnamon-water—not the pungent stuff made up by mixing a little of the essential oil in common water—and taken at noon, promotes digestion and at the same time keeps the bowels regular. An emetic of ipecacuanha will be found to renew the capability of the stomach to profit by bitters when they have ceased to prove beneficial, as they commonly do after long continued use, without this precaution. When the stomach becomes stronger, more decided tonics may be entured upon. The *mistura ferri composita* has been recommended in such a stage of the complaint; but bark seldom

agrees with a weak stomach, though sulphate of quinine may do so better. When we have reduced the plethoric, and raised the weak patient, to a proper standard, then, but not till then, may emenagogues be tried, should not nature have sufficiently rallied to bring on the uterine function of menstruation. A considerable number of medicines of this class may be employed by the practitioner. Dr. Good speaks favourably of 40 drops of the tincture of hellebore; Dr. Burns says that a drachm of this medicine may be given twice or thrice a day. He also mentions madder, myrrh, guaiacum, valerian, cantharides, and nitrous acid as of efficacy as emenagogues. Dr. Copland speaks of the borate of soda as being emenagogue as well as deobstruent. If it be efficacious as an emenagogue, and Dr. Copland is no bad authority for the fact, we consider it to be a far safer medicine than several of those mentioned. Frictions of the lower extremities, exercise, &c., ought be conjoined with any emenagogue. The application of a few leeches to the upper part of the thighs, and also leeching the vulva, at the time that the menses ought to return in regular order, have been advised. But if we reap any benefit therefrom, it ought rather to be where the uterus or some of the parts neighbouring on it may be disposed to congestion. The hip bath, however, or sitting over the steam of hot water at bed-time, would, in our opinion, be far more likely to prove remedial. No stimulating uterine specific can be admitted while febrile symptoms exist. Myrrh, oxide of iron, and the bicarbonate of soda in combination have received the approbation of Dr Burns; but the *mistura ferri composita* is nearly of the same nature.

323. Dysmenorrhœa, or painful menstruation, is more frequent with women who have married at an advanced period of life, and the inhabitants of populous towns, than under other circumstances. It is a disorder that progressively

increases in intensity, not being very severe in the first instance; but in the course of a few years after its first occurrence it may become nearly as distressing as labour-pains. While the pain continues, the menstrual discharge in general is scanty; but as the latter becomes more copious, the pains decrease and go off. In dysmenorrhœa, we shall usually find coagula and even flakes of coagulable lymph mixed among the menstrual fluid; shewing that there has been some degree of uterine inflammation and hæmorrhage, as well as secretion. In an aggravated form of this disease, either shreds of membrane, or a false membrane bearing nearly the shape of the uterus, have been discharged. Dysmenorrhœa, is, therefore, a complaint more or less inflammatory. A vegetable diet, and abstinence from fermented liquors, should therefore be adopted in it, together with the use of laxatives. A single bleeding, if, as sometimes, strongly indicated, should be ordered, and may be of much utility. The warm-bath, as soon as the pain comes on, and a dose of the compound powder of ipecacuanha, at bed-hour, should, however, be in general tried in preference to blood-letting. Dr. Burns advises a stimulating embrocation, such as oil of rosemary with camphor dissolved in it, to be rubbed on the lumbar and sacral regions, "to improve the state of the uterine nerves," and laxatives, combined with sarsaparilla, to be administered: or a short course of iodine; or such stomachics as improve digestion. For a week previous to the expected attack of pain, the hip-bath ought to be used at bedtime. Dr. Burns recommends some mild emenagogue, with an aromatic, to be also prescribed. On the pain coming on, the warm hip-bath should be again employed, and an opiate with the aromatic spirit of ammonia, or ipecacuanha, or Dover's Powder, combined with it, may be taken, as well as warm diluents, to promote perspiration. Some mild purgative, with an aromatic, should be exhibited the next morning, and the

opiate if necessary, repeated in the evening. Should the opiate not agree with the stomach, an anodyne enema may be substituted for it. In the event of a false membrane being discharged, which bears some resemblance to the regular decidua, and which is said to be incompatible with the power of conceiving, the treatment to be adopted is pretty much the same as that just mentioned. The case, however, then becomes more obstinate. Dr. Waller says that it can merely be palliated, and he advises the following as the most successful palliative : —℞ : *Liquoris Ammoniae acetatis*, ℥iij; *syrupi papaveris*, ℥j; *Tincturae Opii*, mxx (vel *pulveris ipecacuanha compos. gr. x.*); *Misturae camphorae*, ℥j. Sit haustus, 3 tiis vel 4 tis horis sumendus. A laxative, if necessary, should precede this medicine, and so should the warm hip-bath. In the intervals, the bowels are to be kept free, and all active exertion forbidden. When the state of health permits, frequent cold or tepid bathing (whichever agrees best with the patient) should be had recourse to, in order to give strength, and render the system less susceptible of irritation.

324. Menorrhagia, or profuse menstruation, is the last variety we shall have to notice. Often this amounts to actual uterine hæmorrhage, and then must be treated on the principles laid down in the chapter on that subject, except those immediately and solely applicable to parturition. It is frequently the effect of local debility, and requires cold applications, cold drinks and the absence of every stimulus calculated to impel circulation to the relaxed vessels of the uterus. Dr. Good recommends the introduction of ice into the vagina, and also the injecting a small quantity of some astringent fluid, by means of a male catheter passed though the os uteri, but the injection to be discontinued “the moment it causes pain in the back.” He asserts that this process has been known to succeed completely the very worst cases.

325. A very considerable and surprising change takes place in the female simultaneously with the first appearance of the menses: her eye becomes more intelligent, her expression of countenance far more interesting than it was before, her voice more sonorous, her manners more engaging, and her mind of a more intellectual cast. Her breasts become developed; and in a very short space of time, we perceive her to be vastly improved both physically and intellectually.

MEMORANDUM RESPECTING TWIN CASES.

326. We imagine that a few words in addition to what we have said in the preceding pages with reference to twin cases will not be altogether unacceptable. Though the chances against children surviving in cases of a plurality of births be considered five times more hazardous than where only one foetus is contained in the womb, still the principles upon which the practitioner conducts the birth accord so strictly with those already laid down, that only a very few cautions require to be subjoined. As the os uteri remains in a complete state of dilatation after the first child is born, it is manifest that we have it in our power to afford any assistance we may deem proper in facilitating the second labour; and the only question is, shall we afford such aid, in consideration of the previous sufferings and comparative exhaustion of our patient; or leave the process to the natural efforts? Now it does not appear that we can calculate with any certainty on the second birth occurring, of itself, with what may be termed convenient speed; and so far is delay from being conducive to the safety of the offspring, that it is alleged by practitioners of great experience, that should the second child be left unassisted for three hours after the birth of the first, the probability is that it will be still-born. We cannot see, therefore, any sound principle on which delay.

could be counselled, unless some extraordinary and special circumstance should occur to justify it. After having ascertained, then, that another child is in the womb, there is no necessity of communicating the information immediately to the mother, lest it should agitate her; but the binder is to be put on with moderate pressure, in order to maintain the previous degree of support which the abdomen experienced before the expulsion of the first foetus, which will contribute also to enable it to recommence its action sooner than it otherwise might. If in half an hour the membranes of the second child remain entire, we are advised to puncture them; and should two hours elapse after our puncturing the membranes without the foetus advancing, or presenting, it ought to be turned and delivered by the feet. Sometimes ergot of rye is given in such cases to awaken the uterine energies. But it is not uncommon for the second child to present in less than half an hour from the first delivery. The placenta of the first child is not to be interfered with 'till after the expulsion of the second, for the placentæ are frequently united, and, even where this is not the case, injury is liable to occur from the interference. The same precautions are necessarily required should there be a third or more births in succession.

APPENDIX.

ANATOMY OF THE FEMALE PELVIS.

I The pelvis in the adult, is composed of three large and very distinct bones, two of which, from their bearing no decided resemblance to any other bones in the human subject, are called ossa innominata. The third of those large bones is named the sacrum. It is of a triangular shape, and, placed, like a wedge, between the two innominata. In early infancy, however, each of the ossa innominata consisted of three separate pieces, and the marks of their separation are discernable in the adult pelvis. The upper part of the os innominatum is called the ilium, the anterior or smallest part, the pubes, and the inferior, the ischium. All the parts of the pelvic bones are firmly united by strong cartilage. The sacrum, in early infancy, also consisted of a number of separate joints (five or six), which bore a strong resemblance to vertebræ, but which in advanced life become consolidated. To the inferior part of the sacrum are joined the ossa coccygis, three or four in number, and which are in the adult female articulated together by cartilage. In general, the female coccyx is thus possessed of some degree of flexibility, and yields in a measure to the pressure of the fœtus in parturition; but instances of the joints becoming completely ossified and, of course, inflexible, have occurred. When this is the case, and it is more likely to happen in women who have not borne children 'till late in life, it is some obstacle to the passage of the child, is regarded as a cause of difficult labour, and may render necessary the use of the forceps or the vectis. The entire of those bones form the "pelvis," or bason. The pubis, or properly the pubes, may be considered divisible into two bones, joined together by cartilage at the symphysis pubis. The pu-

bis is in the front of the pelvis, and is externally somewhat convex, and internally concave, forming what is termed the arch. In a well shaped pelvis, the os sacrum is curved and rather concave, and this concavity is styled the hollow of the sacrum. A flat sacrum is not favourable to parturition. In the cavity of the female pelvis are lodged a number of parts with which it is necessary for the obstetrician to be intimately acquainted : namely, the urinary bladder, a portion of the intestines, certain nerves, blood-vessels, absorbent vessels, and glands, some muscles, the vagina, and the membranous and ligamentous parts, together with the uterus, &c., in an unimpregnated state. The ossa coccygis form a curve, which is very useful in affording support to the rectum. To the superior part, or base, of the os sacrum, is articulated the last of the lumbar vertebræ, and this, from its projection, is called the promontory sacrum. The pelvis is regarded as divided into three parts, viz., the brim or introitus, the cavity, and inferior aperture or exitus ; or it may be considered as composed of a cavity and a superior and inferior aperture. The superior aperture of the true pelvis is marked by a line extending backwards from the pubis to the ossa ilia. In the erect position, this aperture looks upwards and forwards. The inferior aperture is diminished by muscles and ligaments, extending between the os sacrum, the ossa coccygis, and the ossa ischia. This inferior aperture looks downwards and forwards. As to the axis of the pelvis, the line of the axis of the upper aperture, in an erect posture, extends between the umbilicus and the extremity of the ossa coccygis, forming a considerable angle with the line of gravitation of the body. This tends to the proper support of the abdominal viscera. The axis of the inferior aperture is nearly in a line with that of the vagina, and forms a considerable angle with that of the superior aperture. The Accoucheur must bear this point in recollection, more especially in instrumental labour. With respect to the size of the female pelvis, this has been found to vary in different women, in different nations, and even at different periods of life in the same individual.* Dr. Alexander Monroe, Professor of Medicine, Anatomy and Surgery, in the University of Edinburgh, has taken the trouble of collecting a number of admeasurements of the female pelvis, as found in different countries. Some allusion to these may not be unprofitable to the practitioner. But first, of what is termed the standard pelvis. In this, a line drawn from the sacrum to the pubis measures rather more than four inches. This is called the antero-posterior diameter.

* We have made Professor Monroe's excellent work our text-book in the most part of this description.

A line drawn from one os ilium to the other, or the transverse diameter, measures five inches and a quarter. This measurement applies to the superior aperture of the pelvis. In the inferior aperture, a line from the symphysis pubis to the os coccygis, allowing an inch for the retraction of the bone, measures five inches. The antero-posterior diameter of the superior aperture in a negress, was only four inches and an eighth; and, in a deformed female, it was found to be no more than an inch and a half! The transverse diameter in the above mentioned negress was only four inches and six-eighths, and this is given as a specimen of a "well formed" negro pelvis; so that we may infer that the pelves of negresses are a little below the standard of our women. But the contracted space between the sacrum and the top of the symphysis pubis is not the only deformity that takes place in contracted pelves: for we find them frequently diminished in capacity at the inferior aperture, the iliac portions of the ossa innominata being bent inwards; and other contractions likewise take place. All those contracted pelves were found to be unusually light and soft. In fact they suffered under molities ossium at some period or other, and consequently yielded to pressure. Besides certain muscles, and fascia, and strong ligaments which are found in the cavity of the pelvis, and which it is not of practical importance here to particularize, we have the rectum, which, is not *straight*, but descends in a curved line, commonly along the left side of the hollow of the sacrum; the bladder, which is attached to the inner face of the pubis, and also to the anterior part of the external surface of the vaginal substance. Thus, there is a membranous partition merely between the vagina and both the rectum and the bladder: hence the necessity for a practitioner being extremely cautious in the use of instruments, and always taking care to empty both the bladder and the rectum before he undertakes any operation liable to cause pressure on these organs. There are a multitude of nerves that are subjected to pressure during labour, and which account for the numerous painful symptoms complained of in parturition.

ANATOMY OF THE VAGINA.

2. The vagina is a musculo-membranous canal, according to anatomical language. Its average length is about seven inches, but sometimes it is much shorter. At its anterior and posterior sides, it is somewhat flattened. The vagina is considerably narrower in virgins than in women who have borne children. This happens from its never regaining its primitive rugous state after the distension it undergoes in parturition.

It is very distensible, and is curved downwards and forwards, nearly in the course of the axis of the pelvis ; is rather longer posteriorly than anteriorly, and, in virgins, much wider above than below. The vagina is composed of two coats, and is throughout lined with mucous membrane, which, however, is not of an uniform thickness in all women. The vaginal rugæ are large in virgins, but become considerably diminished in size in women who have borne several children. The vaginal lining membrane is much redder near the external than at the internal parts. It is so arranged as to be said by anatomists to form anterior and posterior columns. Very numerous ducts, discharging a mucous fluid, run between the rugæ. These ducts are called the *Prostatæ muliebres*, and in some subjects are of considerable size : in a few instances they appear as if they were slit on the surface of the mucous membrane. The outer coat of the vagina is firm, possesses a contractile power, and is supposed to be muscular, though the muscular fibres are not very perceptible in it. This coat has a cellular coat, or tissue, connecting it to the adjoining parts. The upper and posterior portion of the vagina has a peritonæal covering reflected on it. In a virgin, the orifice of the vagina is about an inch below the symphysis pubis. It is surrounded by a corpus spongiosum, and has also a sphincter muscle. When contracted by the hymen, which is generally a semilunar-shaped membrane, with its concave side looking upwards, the orifice of the vagina, that is, the os externum, is very small. It is through this small concavity that the menses are discharged, and when the concavity is wanting, and the membrane quite continuous in its connection with the vagina, it is a source of great inconvenience at the age of puberty ; and it is a question whether obstetricians ought not to examine the female infant, at its birth, to ascertain that this defect do not exist. When discovered, it is the easiest thing imaginable to remedy it. The sphincter vaginæ, which appears to arise from the sphincter ani, surrounds the anterior and lower part of the vagina, the inferior portion of which it contracts. In some women, however, it has a different arrangement, being a distinct muscle, and inserted into the crura clithoridis. These are veins of a large size, and seem to be compressed in some measure by the muscular fibres of the sphincter vaginæ. The vagina is well supplied with blood vessels. The orifice of the urethra is placed immediately above the os externum. It has happened, though very rarely, that the vagina has been divided by a transverse partition, commonly placed just behind the hymen.

EXTERNAL PARTS OF GENERATION.

3. The external parts of generation in the female are the mons [veneris, the labia externa, the nymphæ, the clitoris,] and the os externum. The labia externa are much more prominent in some women than in others. This chiefly depends on the obesity of the individual. They are thicker above than below, and are lined internally with mucous membrane, florid in young women, but not so in the aged. The labia externa, which are the defence of the more delicate and internal parts, are attached to the symphysis pubis by cellular tissue; they are in form somewhat oval, and usually covered with hair in the adult. From the symphysis pubis they descend, and are united by a transverse bridle, called the *fourchette*, about an inch from the anus. When dissected, the *labia externa* are found to be composed of thin cellular membrane sebaceous glands, and adipose substance; and their internal surfaces are lubricated by a sebaceous secretion. On separating the labia externa, you find a small, rounded, red body, about the eighth of an inch in length, but in certain states of excitement, and also in some individuals even in quiescence, considerably larger. The shape of this small body is not unlike to that of a miniature male penis. It has a prepuce, and even glandulæ odoriferæ beneath the prepuce. In its internal structure it also resembles the penis, except that it is without an urethra. It is said to be distended *in coitu*, and to be the seat of much sensation therein. In some countries, we are told that the clitoris is extirpated as a religious ceremony; but what its use is in the animal economy appears never to have been precisely determined. When the clitoris acquires an enormous size, it is asserted that it betokens, if it do not occasion, a libidinous disposition, which its removal by a surgical operation has been imagined in some degree to correct. The *labia interna*, or nymphæ, are situated on each side of the vagina, and descend from the frenum of the clitoris. They are spongy bodies, of a pale red or purple colour in young women: they are thin and flattened, and rather broader in the middle than at the extremities, and resemble the labia externa in form. The nymphæ possess much sensibility. In European women they are seldom more than an inch in length; but in some warm climates they become so elongated (we suspect, artificially) that they project beyond the labia externa. In the Hottentot women they are sometimes four or five inches long. Sometimes they excise a portion of them. The nymphæ, like

the labia externa, consist of cellular substance, sebaceous glands, and blood-vessels. Below the nymphæ about an inch, we find the orifice of the urethra, and, as we have before observed, just below this urethral orifice is the orifice of the vagina, partly surrounded by its hymen in the virgin state; though the hymen is sometimes wanting altogether even in the purest virgin, who may be born without any such appendage. When the hymen is ruptured *in coitu*, it is said that its remnants form the *processus myrtiformes*. The hymen has been sometimes of an almost cartilagenous consistence, and so very thick and strong that it could not be ruptured by coition, and prevented an intercourse between the sexes. Generally when this is the case it is a continuous round substance, also preventing the discharge of the menstrual fluid. This would be a case requiring a surgical operation. Below the vaginal orifice, and between it and the *fourchette*, is a small cavity, called fossa Navicularis from its boat like shape. The mons veneris is a prominence above the female organs of generation, composed principally of adipose tissue, and more developed in young women than in the aged. It is almost always covered with hair. The vagina is proportionably larger before than after puberty; the uterus is large, but not of the same form in the child as in the adult: the cervix being proportionably larger and rounder.

UTERINE PERITONÆUM.

4. An inspection of the intimate manner in which the uterus and various other parts contained in the pelvis partake of a common covering (or partial covering) of peritonæum will prove that inflammation cannot exist long in one part without extending to the remainder, if not to the abdominal peritonæum itself: for inflammation has a great tendency to pursue its course through the entire of a tissue into which it once penetrates. The posterior surface of the bladder is in connection with the vagina, as has been before pointed out. It is also in contact with the uterus. The peritonæum forms a covering for the posterior and upper part of the bladder. From this it is reflected upon the posterior part of the vagina, and thence proceeds along the cervix and fundus uteri. It then descends, in a duplicature, or double fold, upon the posterior part of the uterus (the anterior side not being invested with peritonæum); and this duplicature of peritonæum is called *the broad ligament of the uterus*. From the posterior and external surface of the uterus, the peritonæum proceeds to the rectum and sacrum to which it attaches the rectum. The peritonæum

likewise invests the *Fallopian tubes*, the *ovaria*, and the uterine blood-vessels and nerves. The anterior layer of the peritonæum, called the broad ligament, is inserted into the sides of the pelvis. By this the pelvis is divided in a posterior and anterior chamber. In the anterior division is contained the urinary bladder; in the posterior the *intestinum curvum*. The posterior layer of the broad ligament it is which is continued to the rectum. The broad ligament is described by anatomists as divided into an anterior and a posterior part. In the anterior portion are lodged the Fallopian tubes; in the posterior, the ovaria with their ligaments. The connections of the uterus, thus, are of a nature that admits of considerable relaxation, and hence the liability to the accident called prolapsus uteri, if the female assume and maintain the erect posture too soon after parturition, before the parts have recovered strength.

THE UTERUS.

5. The uterus is of a shape resembling that of an oblong pear, somewhat flattened, the depressed sides being placed towards the sacrum and the pubis. In the unimpregnated state, it is about three inches long, about two inches broad at the fundus, and one at the cervix. At the cervix it is rather more and at the fundus rather less than half an inch in thickness; and this thickness is rather increased than diminished in pregnancy, showing that there is a sort of growth of substance concurrent with the increase of capacity and surface in the organ. The great enlargement of its veins and other vessels perhaps sufficiently accounts for this appearance. The cervix (we have described it in the unimpregnated state) leads from the os uteri, or *os tinæ*, in nearly a straight direction to the fundus, and is very small. This is the lower division of the uterus, the fundus being the upper division. The body (*corpus*), or middle division, connects the *cervix* and *fundus*. In the unimpregnated state, the place of junction between the cervix and corpus, or body, has a smaller cavity than any other part of the organ. From thence the uterus swells till we arrive at the fundus, where it is expanded into a somewhat triangular form. Two of its angles contain the entrance-points from the Fallopian tubes into the uterus. Through the middle of the uterus runs a kind of prominent line, longitudinally. The uterus is of a strong and firm consistence; it is composed of fine muscular fibres, of a pale colour, and very intimately intermingled, and connected by cellular substance, having numerous

arteries, veins, lymphatics and nerves. The uterine muscular fibres are different from those seen in any other part of the body. The blood-vessels, particularly the veins, are of a large size, more especially, as we have repeatedly remarked, during pregnancy, when some of them will admit the point of a finger. The arteries of the uterus are derived from two branches, namely, the spermatic arteries, and the hypogastric. The former pass to the uterus over the psoæ muscles, behind the peritonæum, and enter between the laminae of the broad ligament, with a covering of which they become invested. They insinuate themselves near the fundus, and give off branches to the ovaria and the Fallopian tubes. The hypogastric arteries pass, from the internal iliac arteries which give them off, to the sides of the middle division, or *body* of the uterus. They send their ramifications in various directions, and anastomose with the hypogastric arteries. The veins bear the same name and are traceable in the same direction, as the arteries: they also anastomose in a similar manner. The numerous lymphatics of the uterus follow for sometime the course of the blood-vessels, but some of them (those that accompany the hypogastric vessels) pass into the glands of the iliac plexus, while the others enter the glands which are near the origin of the spermatic arteries. In some places, more especially at the *cervix*, the substance of the uterus, when cut into, has an appearance not unlike cartilage, intermingled with a reddish, fibrous substance. The lining membrane of the uterus is soft and vascular. This membrane is disposed in transverse rugæ at the cervix. In the body of the uterus the rugæ are smaller, but few in number, and disposed in a longitudinal direction. There are between those rugæ lacunæ secreting a mucous fluid. The uterus has also numerous small glands interspersed through its substance. As to the nerves of the uterus, there is some difference of opinion apparent among anatomists as to the exact sources whence they are derived. Dr. Denman says that the organ draws its supply from the lower mesocolic plexus, and from which two flat ganglions which are situated behind the rectum; and that those ganglia are joined by a number of small branches from the third and fourth sacral nerves. He adds that the *ovaria* derive their nerves from the renal plexus; but that the greater number of nerves of these parts are rendered extremely irritable; and that it is by the branches which the uterus receives from the intercostal that the intimate consent between it and various other parts is chiefly maintained. Walter of Berlin says that the uterine nerves are derived from the fourth hypogastric plexus, and also from the third sacral. Dr. Wil-

liam Hunter (that indefatigable man of science and research) speaks of the nerves of the uterus as arising from the abdominal part of the uterine nerve, and from the hypogastric plexus. Dr. Burns enters into a long and minute detail on the subject, which we shall not here pursue farther; though nothing can be of more interest to the scientific practitioner than to be able to trace, to nervous connections of the parts, those sympathetic pains which arise during uterine affections. There are various opinions, also, respecting the degree of sensibility which the uterus possesses in a normal state: but we must pass over such discussions; we know that uterine sensibility is sometimes of a very extended nature. At the orifice of the uterus is the *os tinæ*, or *os uteri*,—these being synonymous terms. The *labia* or lips of the uterus are thought to resemble those of the tench fish, and hence the name of *os tinæ*. In the virgin, the lips are in contact, but in women who have been mothers of several children they are more or less separated, and also softer. In such, likewise, the cervix uteri is more rounded, and thicker than in virgins.

THE OVARIA.

6. The *ovaria*, sometimes absurdly called *testes muliebres*, constitute a most essential part of the female organs of generation. It is here that the first rudiments of the fœtus are supposed to be formed. These ovaria are situated in the posterior processes derived from the peritoneal broad ligament of the uterus. In the prime of womanhood, the ovaria are not very unlike the male testes in form and size: but in point of function not the most distant resemblance can we discover between them. They are about an inch and a quarter long, half an inch broad and rather flattened at the sides. In old women, they shrink and are indurated. In infants their colour is reddish, and their form somewhat prismatic. The *ovaria* are covered with peritonæum, as may be inferred from their situation; and Haller states that a fissure takes place in that covering whenever an ovum passes into the Fallopian tube. The ovaria, however, have also their proper coat, which is fibrous, and of a greyish colour. When you incise the *ovaria* of young women, you find them to be of a spongy texture, and greyish hue, with a number of small, transparent bodies, called *ovula*, studding them. The *ovula* are not uniform in their size, but usually are about two lines and a half in diameter. They become hard and fibrous in old age. Respecting the *corpora lutea*, all anatomists are not

unanimous. Sir Everard Home considered that "they were glands formed purposely for the production of ova,—that they exist previous to, and are unconnected with, sexual intercourse, and, when they have fulfilled their office of forming ova, are afterwards removed by absorption equally whether the ova are impregnated or not." They are of an oval or circular form, and, when divided, are found to be hollow in the centre, and of a yellowish brown colour; according to the opinion of the ingenious authority quoted, the *corpus luteum* is the vidus in which the ovum is formed. Other persons, however, believed the *corpora lutea* to be the calyces from which the impregnated ovum had dropped, and that their number is always in proportion to the number of conceptions that were found in the uterus. Dr. Denman says that "they are largest and most conspicuous in the early state of pregnancy, and remain for some time after delivery, when they gradually fade and wither until they disappear. They are extremely vascular, except at their centre, which is whitish; and in the middle of the white part is a small cavity, from which the impregnated ovum is thought to have immediately proceeded." Dr. Burns asserts that those *corpora lutea* may burst, discharge the ovum, and then shrivel away and be gradually absorbed, even without sexual intercourse; and he informs us that, "In a virgin, aged 47, the vestiges of seven *corpora lutea* were formed in one ovarium, and of five in the other." He adds, "The *corpus* does not at first contain a cavity, far less an ovum, but resembles a 'solid glandular structure loaded with blood-vessels.'" However this point regarding the *corpora lutea* may be decided, there appears little doubt that when the ovum is impregnated, and swells to a prominence, the peritoneal covering gives way, the ovum passes into the Fallopian tube, and a sort of scar remains on the surface of the peritoneal coat at the spot where the ovum escaped.

THE FALLOPIAN TUBES.

7. The Fallopian tubes extend transversely across the pelvis, and are somewhat of the form of a trumpet, their narrow extremities being next the uterus, and their apertures, there, being so small as barely to admit a hog's bristle. At the other, or ovarian extremities, they are loose, and have a number of fringe-like appendages, or processes, called *fimbriæ*. These *fimbriæ* appear to have a sort of prehensile power during coition, and to grasp the ovum as it escapes from the ovarium, conducting it into the Fallopian tube. The tubes of Fallopius, as has been

shewn, are also covered with peritonæum, within which, in young and robust women, are muscular fibres in a longitudinal direction, cellular substance, and a mucous membrane continuous with that lining the uterus. It is of this membrane, which projects beyond the broader extremities of the Fallopian tubes, that the fimbriated processes are formed. The tubes are very vascular, and possess veins of a very considerable magnitude. In the Fallopian tube the ovum remains for some time before it passes into the uterus, which during that period has been preparing itself for the reception of the embryo.

THE FUNCTION OF GENERATION.

8. Over the function of generation there reigns much of mystery, notwithstanding the indefatigable speculations of physiologists on the subject. That impregnation can take place without the male seed being injected into the uterus, there can be no doubt, as females have become pregnant without the hymen having been in the slightest degree injured [164]. And, even if the seminal fluid were directly lodged in the uterine cavity, how is it to get into the ovarium except by some process of absorption? How this absorption is accomplished it is difficult to say, and not very easy to imagine. In those cases where the seminal fluid was barely introduced into the vagina through the small semi-lunar aperture in the hymen, the absorption must have taken place through the vagina and its organization; and one would be almost disposed to imagine, from the manner in which the ovum escapes from the ovarium, and from this appearing to take place with or without coition, if respectable authorities can be confided in, that the most elaborate process of impregnation occurs in the Fallopian tube itself, for *there* the impregnated ovum has generally been found if the animal were opened shortly after the act of corporal connection. The proper genital fluid, as furnished by the male testes, we know to be considerably diluted by the secretion of the *vesiculæ seminales*, and, afterwards, in the female vagina, it undergoes, probably, a considerably greater dilution with the *vaginal mucous*. Some ingenious imaginers have started the idea that the mere *aura seminalis* is sufficient for impregnation. What need is there for such excessive refinement, while we know that there is such a general process as absorption in the system, and have reason to believe that no part of the body is better organised for that process than the female organs of generation? Dr. Gartner, of Copenhagen, declares that he has discovered a *duct*

leading from the vagina to the ovarium ; and if it be true, as has been asserted, that a fœtus has been found lodged in the ovarium itself, we must give up the idea of the Fallopian tube being the part in which the essential act of impregnation occurs, though this tube unquestionably serves as a sort of ante-chamber to the uterus. This fact of ovarian pregnancy rests upon the respectable authority of Dr. Granville and Mr. Painter. But it would be fruitless to enter deeply into the controversy : for all we know to a certainty is, that a portion of ovum comes from the ovarium ; that it remains for a considerable time in the Fallopian tube, and thence is conveyed into the uterus, which, on impregnation, and that whether the fœtus reach the womb or not, sympathetically sets up a vital action of its own, whereby membranes are formed on its internal surface ; that the ovum, on entering the uterus, becomes soon enveloped in those membranes, in addition to whatever appendages the fœtus brings in with it ; and that the growth and organisation continue to progress, under favourable circumstances, until the uterus puts on expulsive action. Neither our space nor our plan will justify farther indulgence in physiological speculations on this subject.

OF SOME MEDICINES APPROPRIATE IN MIDWIFERY.

ERGOT OF RYE.—Opinions are in some degree conflicting with respect to the propriety of using this medicine at all. Dr. Burns seems to bring a heavy accusation against it, that of proving deleterious to the fœtus in utero. He says, “ It has been observed, that children born after the exhibition of ergot were very often dead, and in that case are blanched and bloodless.” But he confesses that “ this effect upon the child is by no means invariable.” We do not believe it to have been an “ effect” of the ergot, but mere coincidence. Other practitioners of high reputation, and among them Dr. Dewees, bear the strongest testimony in its favour, and consider the ergot of rye to be a most valuable acquisition to midwifery practice. Dr. Waller, Editor of *Denman’s Midwifery*, alludes to the reports to the prejudice of this medicinal agent, only to repudiate them, he says “ Like most other remedies, it experienced on its introduction considerable opposition, some believing that it had no particular effect, others asserting that it exerted a deleterious influence upon the child ; but the evidence of its efficacy has at length so accumulated, that it is now acknowledged by those who have had the best opportunity of using it on a

large scale, that it is, when judiciously employed, a most valuable acquisition to the *materia medica* of the accoucheur: that when used in certain states and conditions of the uterus, it has the power of increasing uterine contraction in a most extraordinary manner. A difference of opinion exists as to the best form of exhibiting it, whether in infusion, decoction, powder, or tincture. Numerous cases have been brought forward to prove the advantage of each of these formulæ, and therefore it would probably be fair to infer that they are equally serviceable;" though, perhaps, not equally applicable in all cases. Dr. Waller seems to prefer "giving half a drachm [of the powder] in a cup of warm tea, or gruel, and repeating it in twenty minutes if the first dose have not produced the desired effect." Dr. Rigby denounces the tincture as calculated to disappoint the practitioner's hopes, and advises the powder to be given in *cold* water. Dr. Copland, as has been remarked, recommends us to saturate the infusion of the ergot with as much borate of soda as it will dissolve, and considers that we thereby are far more likely to succeed than by giving the substance separately. There is, we believe, much more importance in looking to the quality of the ergot itself, than in making much ado about the method of administering; not that we will deny that a spirituous tincture appears to us to be rather an inconsistent preparation of a substance which we believe not to be in any degree resinous, and which we suspect would yield its virtues more readily to an aqueous medium. The ergot should be kept in a well-stopped bottle, *free from the light and damp*. After pains have entirely ceased, it is by no means so efficacious in bringing them on again, as in increasing their energy when they become feeble. The ergot has been found to lower the pulse; but we know excellent practitioners who regard it as dangerous in vascular excitement.

10. The following is the formula for the sedative pills we have more than once recommended in the body of this work:—

℞ : Camphoræ rasæ,
 Pulveris opii, et
 Hydrargryi chloridi (calomel) āā gr. ss :
 Antimonii potassio tartratis, gr. $\frac{1}{4}$;
 Confectionis rosæ, q. s. ut fiat pilula j.

These pills should be made up with licorice-powder, as magnesia decomposes them, and renders them hurtful. The above dose generally tranquillizes considerably, but in many cases of severe pain and nervous disturbance it may require to be doubled, or speedily repeated. We have found it very useful

in rheumatism not of a decidedly spasmodic character. Where spasm was the prevailing feature, as in that of the intercostal muscles we have derived much more benefit from Belladonna, ipecacuanha and some saline substance (such as nitrate of potash) combined, than from opium. The above pills, in increased quantity, we deem very appropriate in puerperal fever. They are capable of bringing the system under mercurial influence, we would say, nearly as quickly, and more safely, than calomel and opium, while far more tranquillizing, and promotive of the secretions.

FORMULA FOR STIMULATING LINIMENTS.

11.

No. 1. R :

Linimenti camphoræ compositi, et
 _____ Saponis compos., āā, ʒjss ;
 Olei cajeputi ʒj M. Fiat linimentum.

No. 2. R :

Linimenti Saponis compos. et,
 _____ camphoræ compos., āā ʒjss ;
 Olei Terebinth. ʒij ;
 Saponis duri ʒij ;
 Olei limonis, et olei Cajeputi, sing., ʒj—ʒij.
 M. Fiat linimentum.

No. 3. R ,

Liquoris Ammonia, ʒj ;
 Olei Olivæ, ʒij,
 Misce bene, et adde,
 Spirit. camphoræ ʒij ;
 Olei Terebinth., ʒiij ;
 Saponis duri, ʒv ;
 Misce bene, et adde,
 Olei cajeputi ʒj ;
 Olei limonis ʒjss. Fiat linimentum.

No. 4. R :

Camphoræ rasæ ʒijss ;
 Solve in Tincturæ Cantharidis ʒij, et
 _____ Capsici annui, ʒjss ,
 Dein adde,
 Linimenti saponis compos. ʒss ;

et, gradatim, miscendo,
 Liquoris Ammoniaë, ℥vj;
 Olei Olivæ ℥xj. M. Fiat Linimentum.

MORE ANODYNE LINIMENTS.

No. 1. R: Opii, ℥j;
 Camphoræ ℥ij;
 Lin. Ammoniaë ℥iv;
 Saponis duri, ℥iv;
 Olei Terebinth., ℥viij;
 — limonis, ℥ss;
 Spiritus rosmarini, et
 — Lavandulæ, āā ℥xij. Misce pro liniment.

N. B. The above liniment need seldom be prescribed in more than a quarter or half the above quantity, though it may be useful in chronic cases where its long-continued application may be required.

No. 2. R: Linimenti saponis compos. ℥j;
 Liquoris Ammoniaë, ℥iij;
 Olei caryophyl. ℥j;
 Tincturi opii, ℥ss. M. Fiat Linimentum.

ENEMATA.

12. No. 1. R:—
 Fol. Rutæ, et
 Fol. Sabinæ, āā, ℥ss,
 Aquæ ferventis q. s.
 Coque ad ℥xvj; et adde
 Assafœtidæ, ℥ij;
 Olei Olivæ ℥ij. Misce ut fiat
 Enema anti-hystericum.

No. 2. R:—Tincturæ opii ℥j;
 Infus. valer, ℥x;
 Mucilag. acasiæ ℥j. M. Fiat Enema anti-
 spasmodicum.

No. 3. R:—Tinct. opii ℥ss—℥j;
 Infus. cuspariæ, et
 Decocti Althææ off., āā ℥v; M. Fiat enema
 antispasmodicum.

ENEMA IN SPASM OF THE RECTUM.

No. 4. R :—Fol. Belladonnæ exsic. gr. xij ;
Aq. fervid. ℥vj. Fiat enema.

This may be useful where urine is retained, and in uterine spasms.

There is no necessity for giving formulæ for purgative or anodyne enemata, as they are quite familiar to every practitioner.

13 Formula for the *Balsamus vitæ Hoffmanni*

R :—

Balsam. Peruvian., ℥j ; Olei succin., Olei Rutæ, Olei Rosmarini, Olei Lavand., Olei caryoph., Olei pœmentæ, āā, ℥ss. ; Spiritûs Vini rectificat. ℥xjss. Misce benè. (In doses of from 10 to 30 drops, on sugar, or in a suitable vehicle.) This is lauded in abortion by the continental doctors.

The following formulæ used in Sir Patrick Dun's Hospital are so brief, so comprehensive, and so well adapted for general purposes, that, at the request of several of our subscribers we give them a place in this appendix. The practitioner of any intelligence will find herein medicines to answer almost every indication.

BOLUS CALOMELANOS.

R. Calomelanos grana v.
Electuarii Sennæ q. s. M.

BOLUS JALAPÆ.

R. Jalapæ grana xv.
Calomel. grana iij.
Syrupi Zinziberis q. s. M.

COLLYRIUM ACETATIS PLUMBI.

R. Acetatis Plumbi grana viij.
Aquæ distillatæ lb ss. M.

COLLYRIUM SULPHATIS ZINCI.

R. Sulp. Zinci grana viij.
Aquæ distillat. lb ss. M.

ELECTUARIUM JALAPÆ.

R. Jalapæ ℥ij.—
Bitartratis Potassæ ℥vj.
Syrupi Zinzib. q. s. M.

ENEMA AMYLI.

℞. Amyli ℥iij.
Aquæ ferventis lbj. M.

ENEMA DOMESTICUM.

℞. Infusi Lini lbj.
Muriat. Sodæ ℥ss.
Olei Oliyærum ℥iM.

ENEMA TEREBINTHINÆ.

℞. Addetur priori Olei Terebinthinæ ℥ss

ENEMA NICOTIANÆ.

℞. Nicotianæ folior. ℥ss.
Aquæ ferventis lbj.
Coque per horæ quadrantem et cola.

ENEMA NITRATIS ARGENTI.

℞. Nitratis Argenti grana xvj.
Aquæ distillatæ ℥viij. M.

GARGARISMA BORACIS.

℞. Boratis Sodæ ℥ij.
Aquæ lb ss.
Mellis ℥ss. M.

HAUSTUS OLEOSUS.

℞. Olei Ricini ℥ss.
Tinct. Sennæ comp. ℥ij.
Aquæ Menthæ piperitæ ℥vi. M.

HAUSTUS TEREBINTHINÆ.

℞. Addetur priori Olei Terebinth ℥iij.
Et omitt. Tinct. Sennæ.

HAUSTUS EFFERVESCENS.

℞. Carbonatis Sodæ ℥ss.
Aquæ ℥viij. M.
Sumetur ℥i. cum succi limonum vel solutionis
acidi tartarici ℥ss inter effervescentiam.

LINIMENTUM AMMONIÆ ET OPII.

℞. Linimenti Ammoniæ ℥ijss.
Aquæ ℥i.
Tinct. Opii ℥ss. M.

MISTURA ANTIMONIALIS.

℞. Liquoris Tartara emetici ℥ij.

Syrupi Limon. ℥i.
Aquæ ℥v. M.

MISTURA CARDIACA.

℞. Misturæ camphoratae ℥vij.
Liquoris Ætherii oleosi ℥iij.
Carbonatis Ammoniae ℥j.
Syrupi ℥ss. M.

MISTURA MAGNESIÆ.

℞. Carbon. Magnesiae ℥iij.
Aquæ Menth. pip. ℥v.
Spiritus Ammoniae aromat. ℥ij.
Syrupi Aurantii ℥vj.

MISTURA MUCILAGINOSA.

℞. Semen Lini usitatissimi ℥ij.
Coque in aquæ q. s. ut colentur lb vj.
Colaturæ Adde Sacchari ℥vj,
Acidi Tartarici ℥iss.

MISTURA SULPHATIS QUININÆ.

℞. Sulphat. Quininae grana viij.
Acidi Sulphurici diluti ℥ij.
Aquæ Cinnamomi ℥iij.
Aquæ Rosæ.
Mucilaginis Gummi Arabici utriusque ℥ij.
Syrupi Rosæ ℥vj. M.

MISTURA SENNÆ.

℞. Infusi Sennæ comp. ℥vij.
Sulphatis Magnesiae ℥j.
Tincturæ Jalapæ ℥vj. M.

MISTURA SENNÆ ANTIMONIALIS.

℞. Addetur priori Tartari emetici granum.

MISTURA SENNÆ CAMPHORATA.

℞. Tere Misturæ Sennæ ℥viij. cum Camphoræ.
granis viij. et cola.

PILULA ANTIMONIALIS COMPOSITA.

℞. Calomel ℥j.
Tartari emetici grana iij.
Opii grana iv,
Conservæ Rosæ q. s. M. et ft. pilulæ xij.

PILULA CALOMELANOS ET IPECACUANHÆ.

℞. Calomel. ʒij.
Ipecacuanhæ ʒi.
Conservæ Rosæ q. s. M.
Ft. pilulæ xl.

PILULA CALOMEL. ET OPII.

℞. Calomel ʒj.
Opii Extracti aquosi gr. v. M. ft. pilulæ x.

PILULA CONII ET IPECACUANHÆ.

℞. Succī spissati Conii ʒj.
Ipecacuanhæ grana x.
Conserv. Ros. q. s. M.
Ft pilulæ xij.

PILULA CROTONIS.

℞. Pulveris Glycyrrhizæ ʒij.
Olei Crotonis guttas xij.
Ext. Opii aquosi grana iii. M.
Ft. Pilulæ xii.

PILULA ELATERII.

℞. Elaterii grana iij.
Sacchari alb. grana vj.
Confect. Aromat. ʒij. M.
Ft. pilulæ xij.

PILULA HYDRARGYRI ET COLOCYNTHIDIS.

℞. Massæ Pil. Hydrarg.
———— Colocynth. comp. utriusque ʒij. M.
Ft. pilulæ lx.

PILULA IPECACUANHÆ ET SODÆ.

℞. Ipecacuanhæ ʒj.
Subcarbon. Sodæ siccāt. ʒij.
Sacchari syrup. empyreumat. q. s.
Ft. pilulæ xx.

PILULA QUININÆ.

℞. Sulphat. Quininæ grana xij.
Extracti Gentianæ q. s. M.
Ft. pilulæ xij.

SOLUTIO ACIDI NITRO-MURIATICI.

℞. Acidi Nitro-muriat. ʒv.

Aquæ lbij. M.
Ita ft. balnea vel lotiones.

SOLUTIO ACIDI TARTARICI.

R. Acidi Tartarici ℥j.
Aquæ lbj. M.

SOLUTIO IODINII FORTIOR.

R. Iodinii grana xxiv.
Hydriodatis Potassæ grana xlvij.
Tere simul.
Adde Aquæ destillatæ ℥viij. M.


SOLUTIO IODINII.

R. Solut. Iodinii fort. ℥i.
Aquæ lb ij. M.

SIR JAMES MURRAY'S SOLUTION OF MAGNESIA.

We cannot properly conclude our notice of medicines suitable to the puerperal state without adverting to the excellent preparation of *fluid Magnesia* introduced by Sir JAMES MURRAY, M. D. It is a preparation well worth the attention of the Accoucheur from its beneficial effects in many affections of the stomach that occur during and after parturition. Sir JAMES has availed himself of a natural principle, that of perfectly dissolving purified magnesia by means of an abundant impregnation of Carbonic acid in distilled water. This salubrious antacid and gentle aperient can be so combined with other medicinal substances as to become a most agreeable and convenient vehicle. Of the purity of other solutions of magnesia we cannot venture to speak; but that from Sir JAMES MURRAY'S manufactory we feel no difficulty in recommending in the strongest terms.

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Sp

J. Maynard

